



# Laser Explorer APP User Manual

## Revise History

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1.0.0	2022/02/14	Zhixin Wu Jun Xiong Yuanwei Nong	Translated by Mavis
1.0.1	2022/07/04	Zhixin Wu Yuanwei Nong	Add updated content and English Image

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# 1 APP software manual



APP icon

Introduction: Laser Explorer APP software manual, including APP download, login, search device, sidebar, user interface, control, software shortcut functions, preview, configuration and other functional descriptions.



## 2 APP download and installation

Apple mobile phone system requires iOS system 10.0 or above, and Android mobile phone system requires Android 7.0 or above.

### 2.1 iPhone installation

Search for "Laser Explorer" in the App Store to download directly.

### 2.2 Android phone installation

Overseas: Search for "Laser Explorer" in Google play to download directly.

China: To be determined.

### 2.3 QR code download

Scan the QR code to download



Google play (Android)  
Download QR code



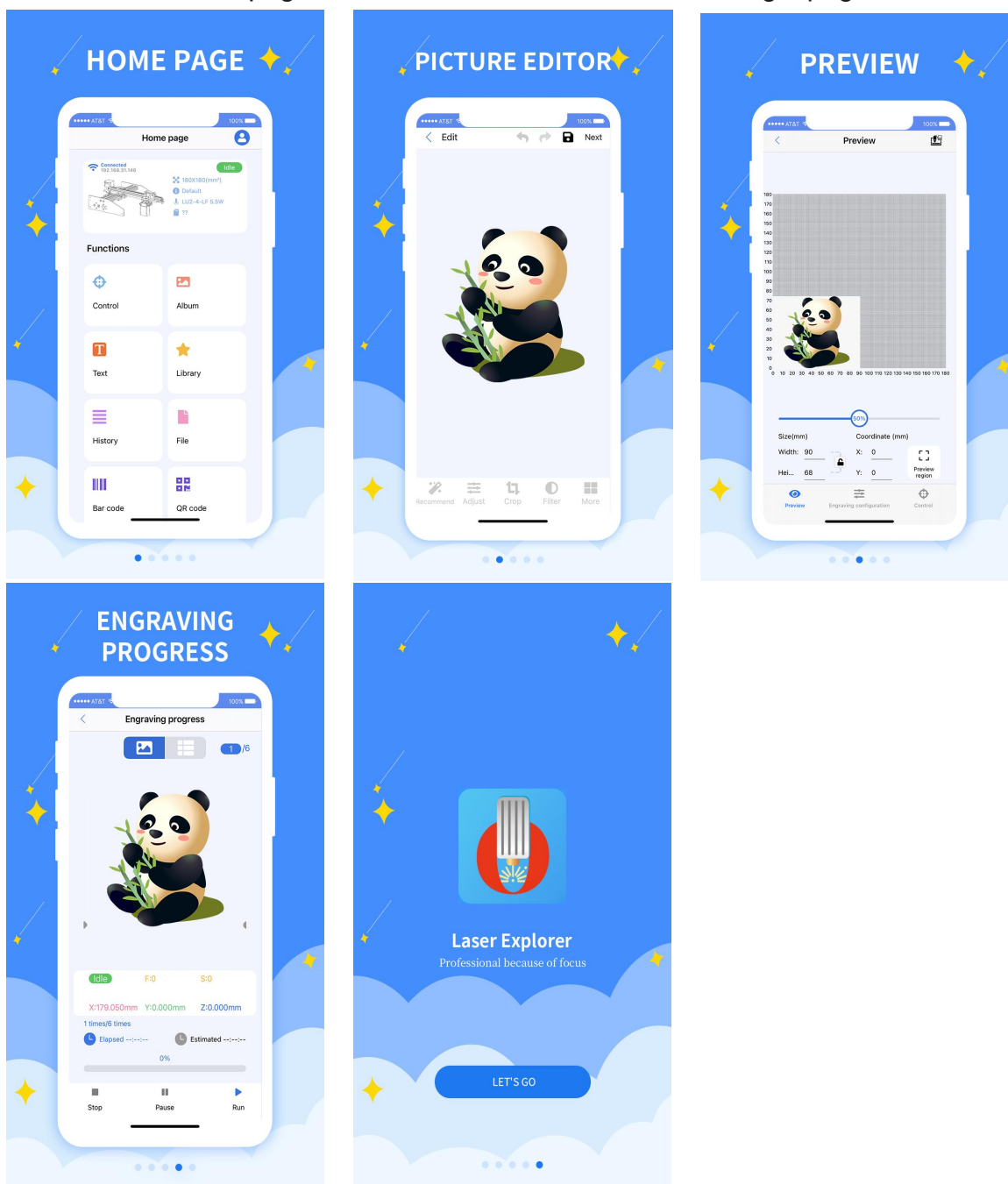
App Store (IOS)  
Download QR code

# 3 Software operation

## 3.1 Boot the login interface

①After downloading the app, the user opens the welcome page for the first time, swiping left and right to switch。

②Scroll to the last page and click "LET'S GO" to enter the login page。



## 3.2 Login and sign in

The APP supports three modes: account login, third-party login, and visitor login::

①Account login: Enter your personal account and password, and click the "Login" button to log in directly.

②Third-party login: Click the corresponding third-party social software icon to jump to the APP for authorized login.

③Guest mode: use this APP without logging in.

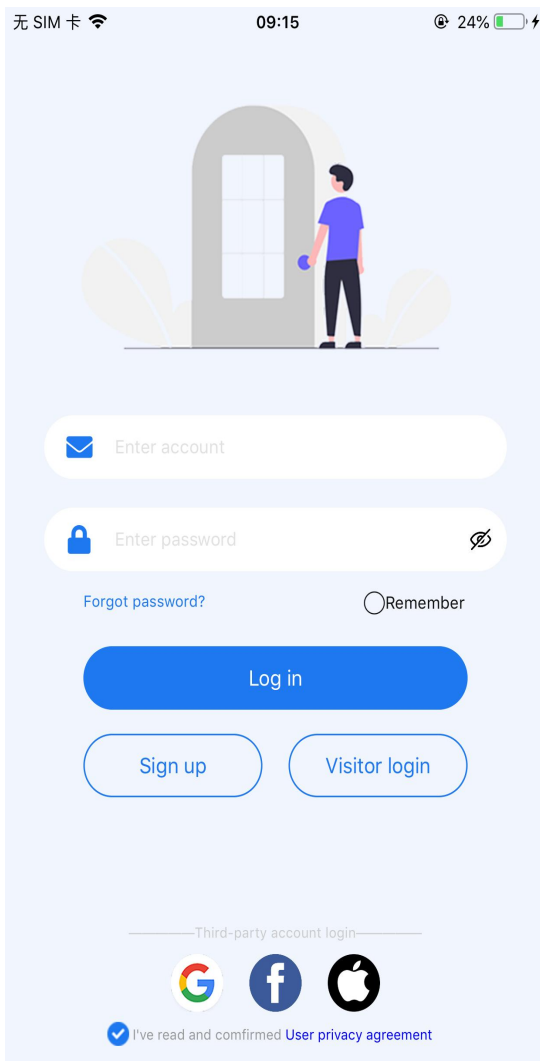


Image3.2.1 IOS login interface

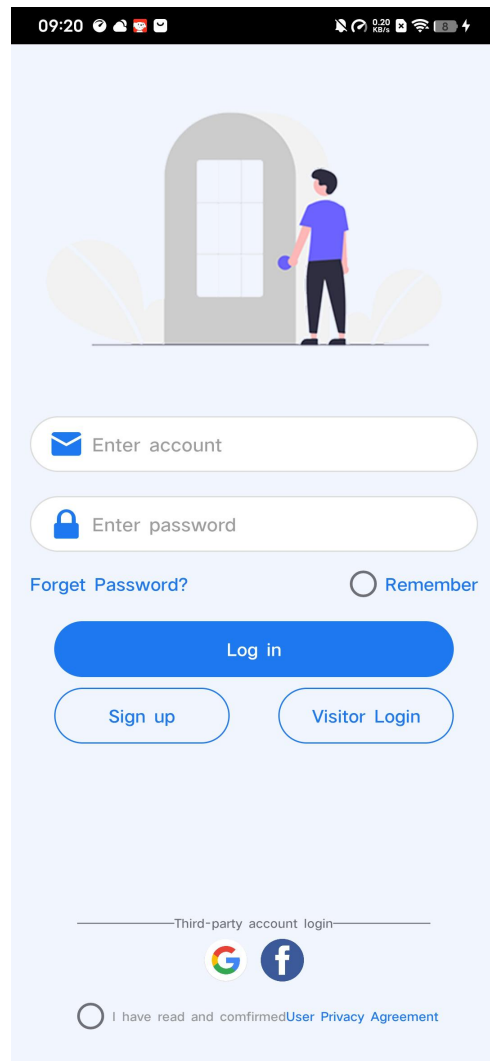


Image3.2.2Android login interface

## When no account is used:

- ① Click Register to enter the registration interface。
- ② Enter the email address, enter the account password and confirm again, click "Register".
- ③ After successful registration, you can enter the login interface to log in。

\*\*\* Tip: An email can only be registered once。

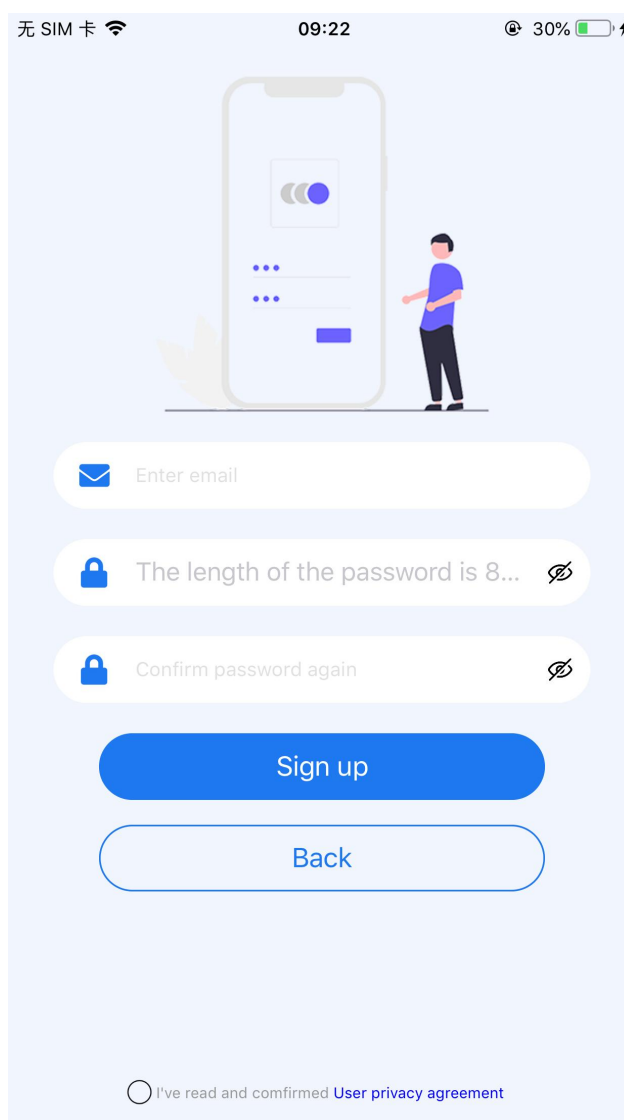


Image3.2.3 registration page

### 3.3 Forgot or reset password

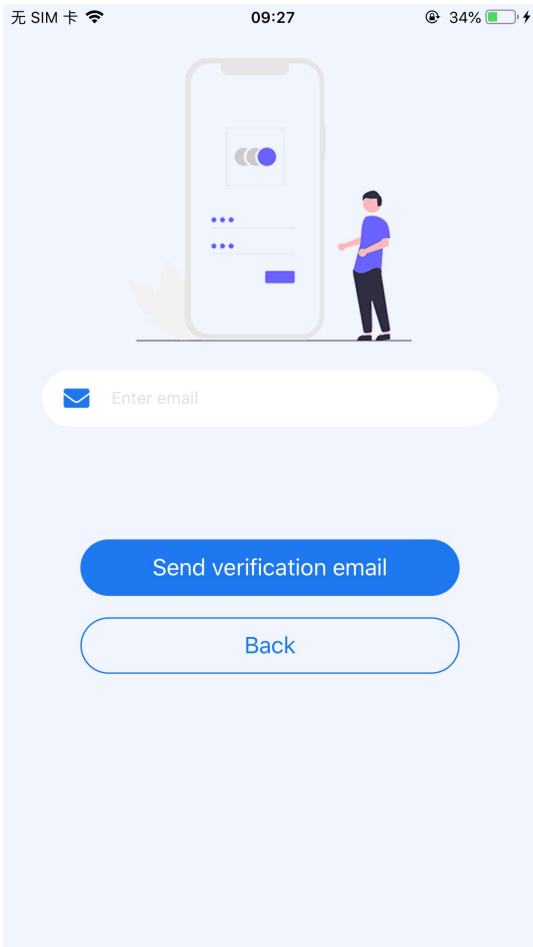


Image3.3.1Forgot password page

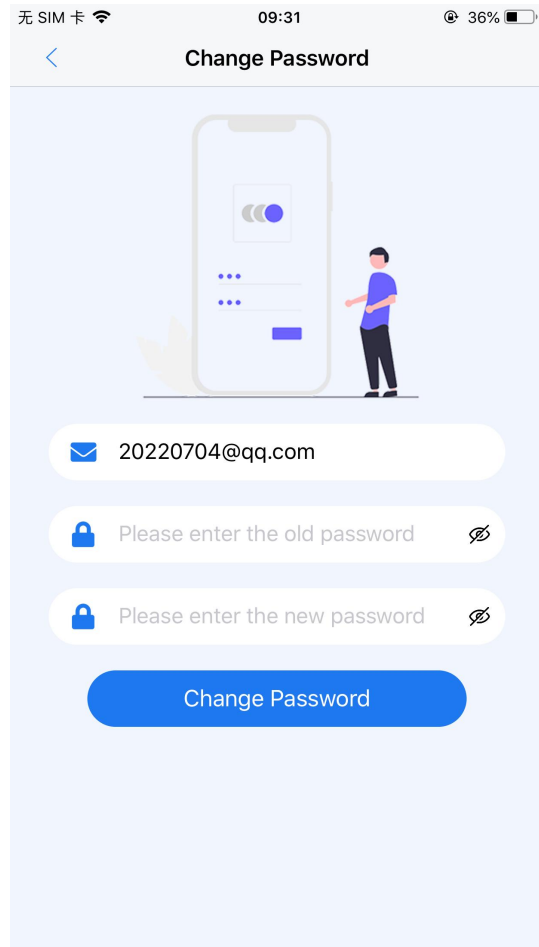


Image3.3.2reset password page

①From the login interface, click the "Forgot Password" button to jump to the Forgot Password page, and enter the registered mobile phone number/email. Click the "Send Verification Email" button to jump to the next interface.。

②Enter the verification code obtained from the mobile phone/email, enter the reset password, and click the "OK" button to complete the password reset operation.。

## 4 Home interface

The home page interface is mainly composed of three modules, as shown in the image4.1:

1、 Title bar module (marked A): This module includes: the middle title bar font, which displays the home page or the name of the currently connected engraving machine model; the side bar button (portrait icon), click to open the side bar, you can view user information and its settings, view help documentation, software check for updates and language switching.

2、 Device module (marked B): This module has three states. When there is no device by default, when the APP and the engraving machine are connected to the same Wi-Fi, the module can be clicked to enter the engraving machine connection page, and the engraving machine can be searched and connected.

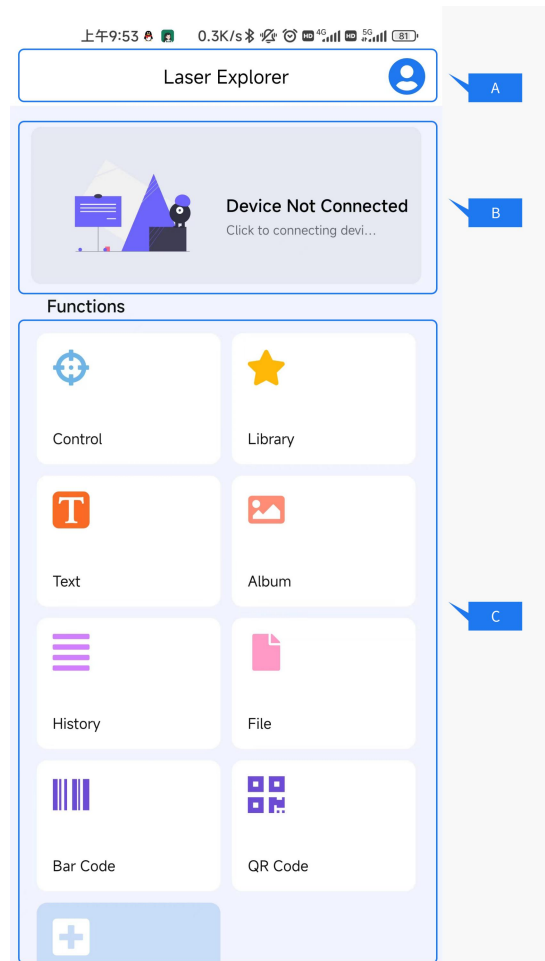


Image 4.1 home page

3、 Common function module (marked C): This module includes control page entry, album print entry, text print entry, material print entry, history record entry, file entry and bar code, QR code print entry, users can choose the corresponding entry according to their needs entry to operate.

## 5 Device connection module (Marked part B in Image 4.1)

Synchronous local area network, detailed steps are as follows

- ① Mobile WIFI connection (Image 5.0.1): Connect to WIFI on the mobile WIFI connection interface, and confirm that the WIFI signal is smooth.
- ② Engraving machine WIFI connection (Image 5.0.2): Use the WIFI connection function in the handle (see the handle manual for details), and connect to the same WIFI as the mobile app.
- ③ After completing the above operations, click the home page device module to enter the search page for device search.



Image5.0.1 Mobile WIFI connection

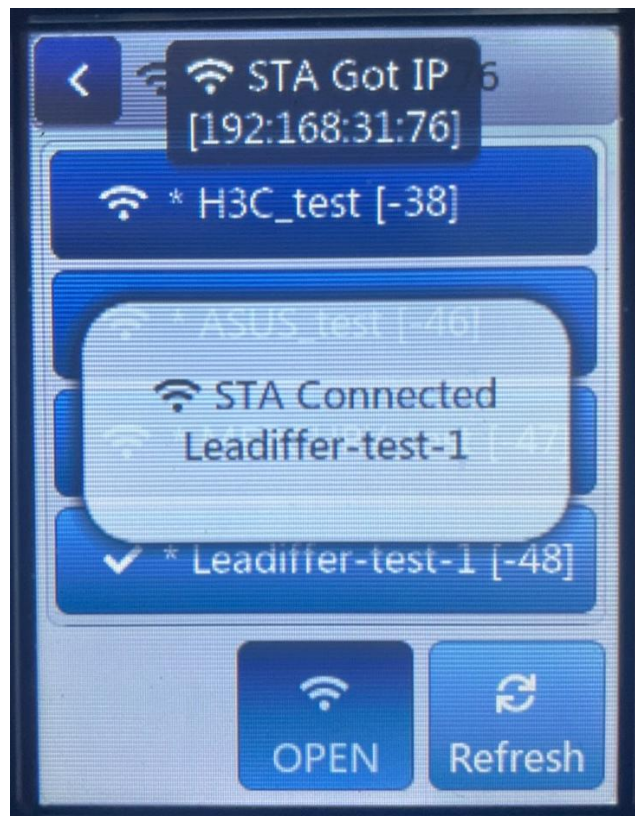


Image5.0.2 Controller WIFI connection

## 5.1 Connection method

5.1.1 Network distribution mode (Note: Currently only OLM3 and subsequent new devices are supported)

① Add a new device: Click the device card to enter the search page (Image 5.1.11), in the search page - add new device, select the device that needs to be connected currently, and click the corresponding card to enter the configuration network.

② Configuration network: After entering the configuration network (Image 5.1.12), the name of the currently connected WiFi will be automatically filled in, and only the WiFi password needs to be filled in. After filling in successfully, click Next to enter the device network configuration.

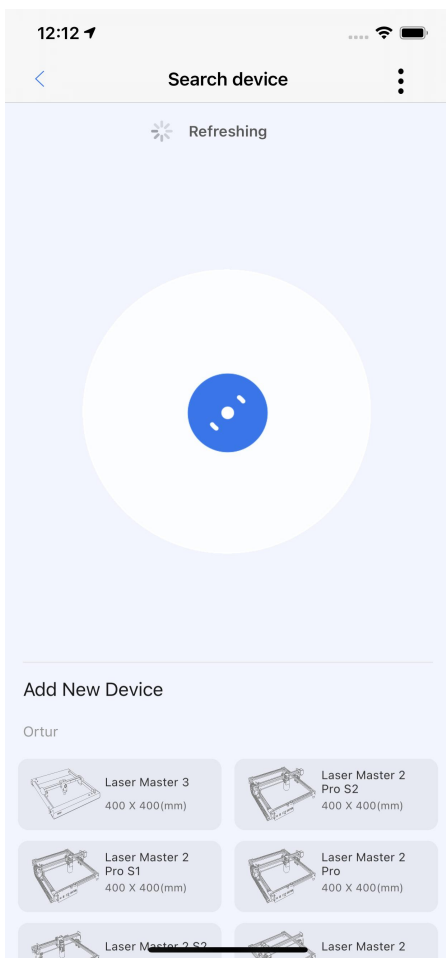


Image5.1.11Search page

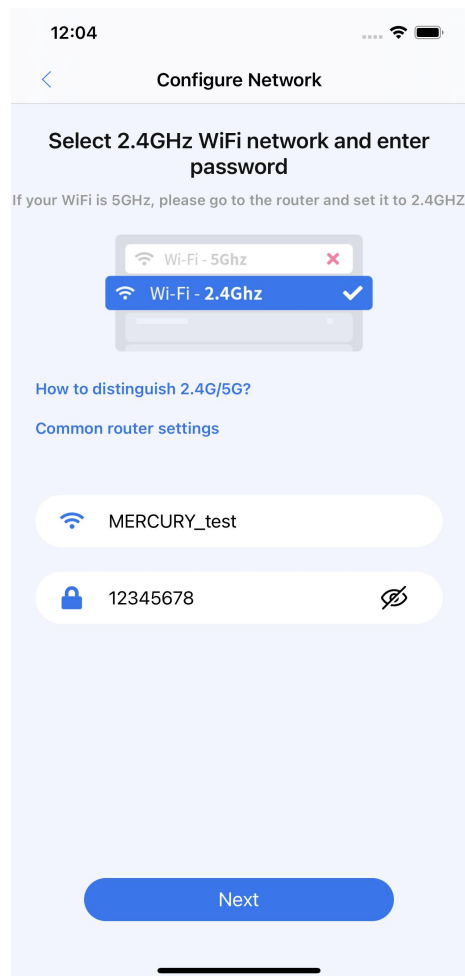


Image5.1.12Configure the network



③ Enter the device into the distribution network: Use the device to quickly press the power supply of the device 5 times in a row to turn on the device (Image 5.1.13), so that the device enters the distribution network mode (the color of the light changes in color).



Image5.1.13Device power

④ Device configuration network: After the device successfully enters the configuration network mode, click Next on the device configuration network (Image 5.1.14) page to enter the configuration network.

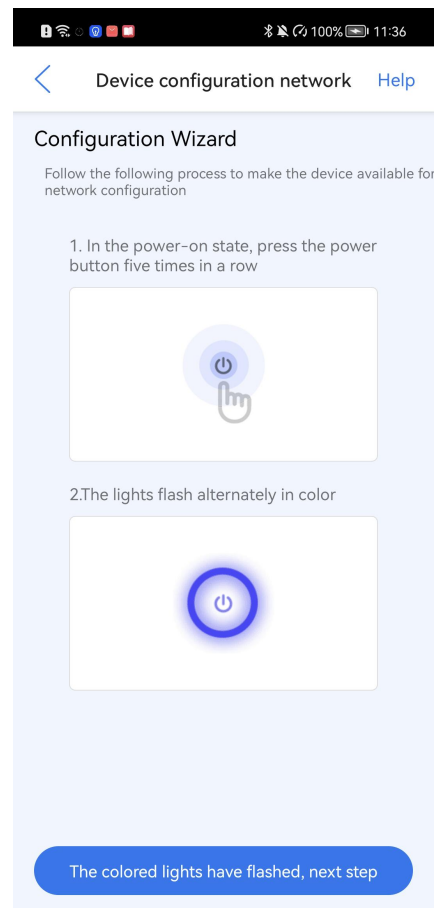


Image5.1.14Equipment distribution network

⑤Configure the network: move the device as close to the router as possible, transfer data at a better speed, wait for the device to be connected (Image 5.1.151), transmit information (Image 5.1.152), and wait for networking (Image 5.1.153), after success Click OK to complete the automatic connection of the device and return to the home page.

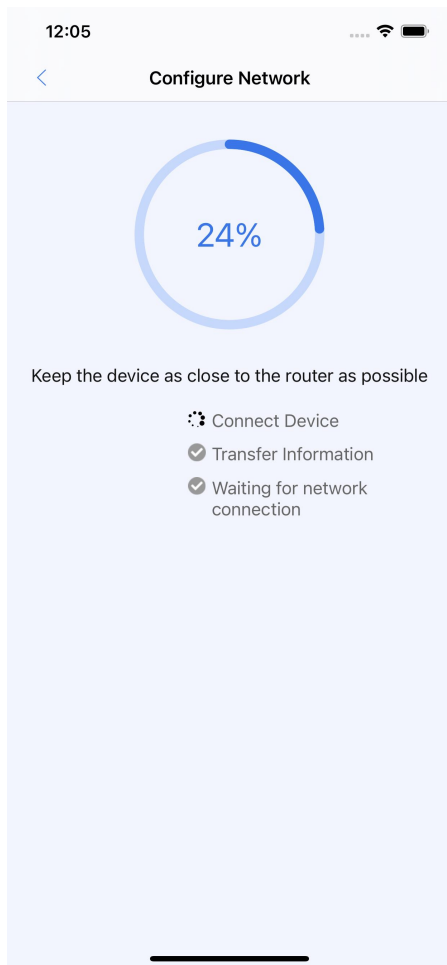


Image5.1.151 Connect the device

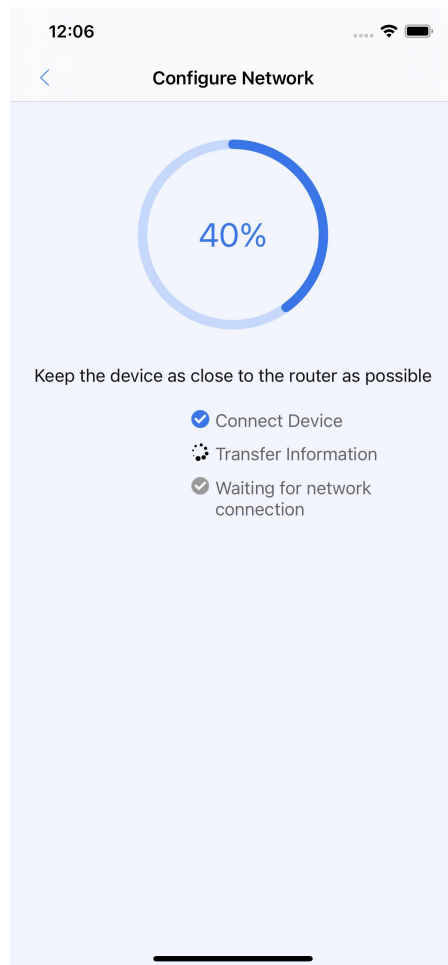


Image5.1.152 Transmit information

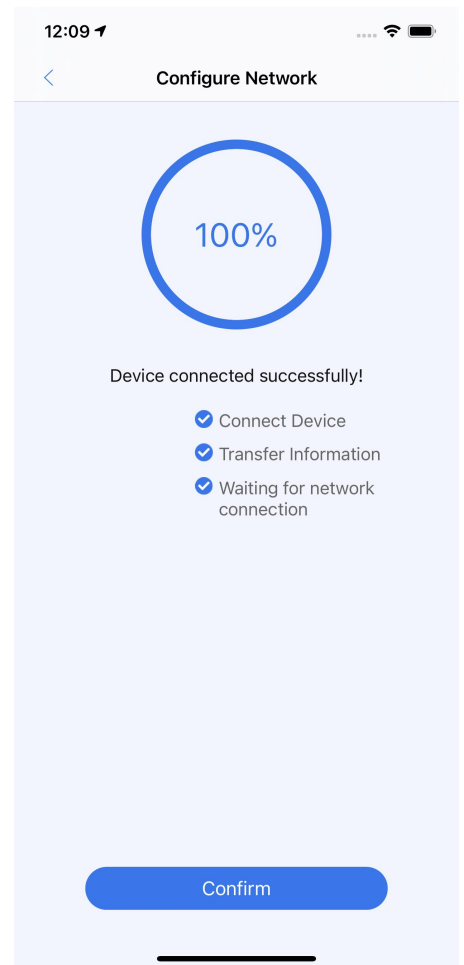


Image5.1.153 Wait for internet

### 5.1.2 Search Mode

① Enter the search page, the App will automatically search, and the user can choose the corresponding device to connect (as shown in Image 5.1.21). If the WiFi is connected, you can view the IP address of the machine on the home page of the controller. If it is not connected, please refer to chapter 5.0 to connect to WiFi.

② Users can also pull down to refresh the page to search and update the device and its status again (as shown in Image5.1.22).

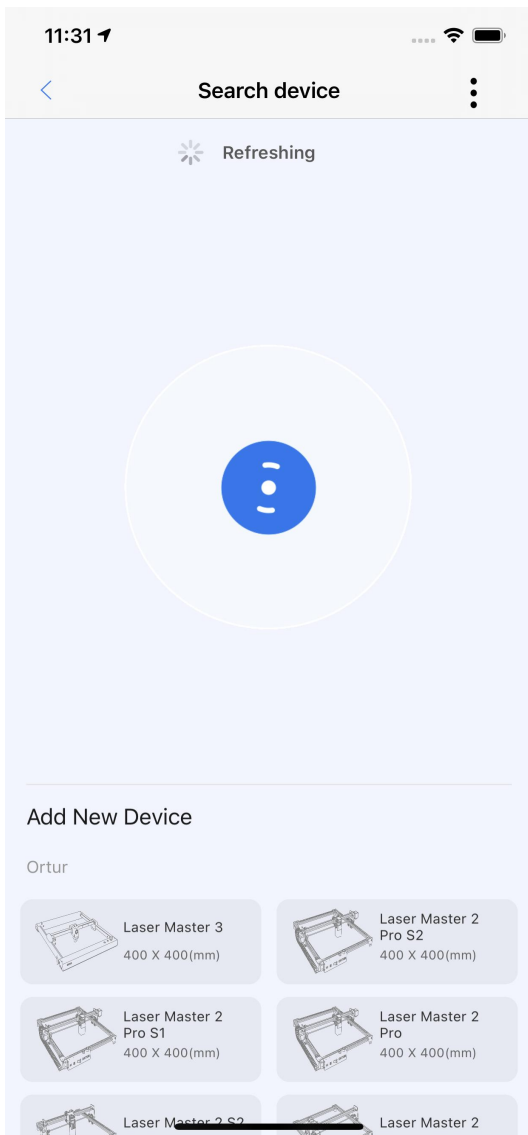


Image5.1.21 Search device interface

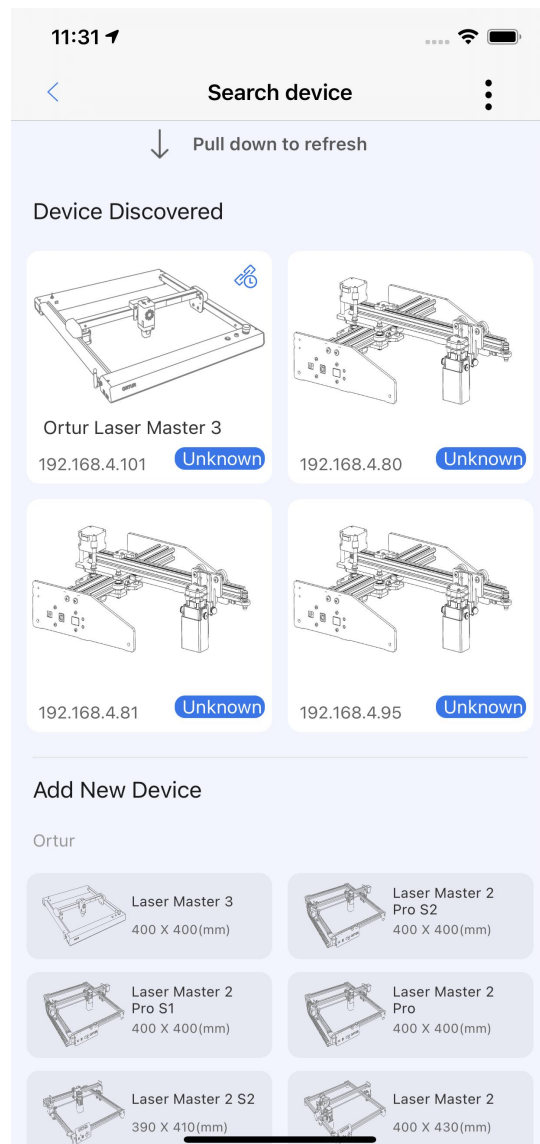


Image5.1.22 Pull down the search interface to refresh the page

③When there is no engraving machine connected under the WiFi, there will be no device searched nearby page (such as Image5.1.23). At this point, you need to check whether the engraving machine handle and app are connected to the same WiFi correctly, and search for the device again (such as Image5.1.23).

④ When the engraving machine is in an abnormal state, please check the network and the WiFi connection of the engraving machine and reconnect.

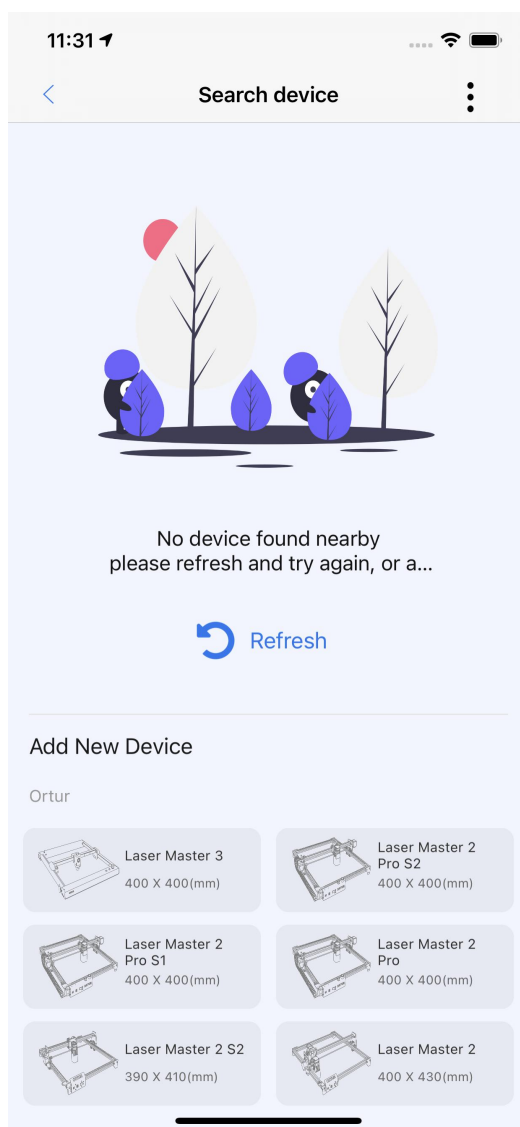


Image5.1.23search device

### 5.1.3 Manual addition

① In the search interface (such as Image5.1.3), click the three-dot button in the upper right corner to enter the interface for adding engraving machine manually.

② After the interface of adding engraving machine manually pops up, you can enter the IP address and port, and click OK to connect.

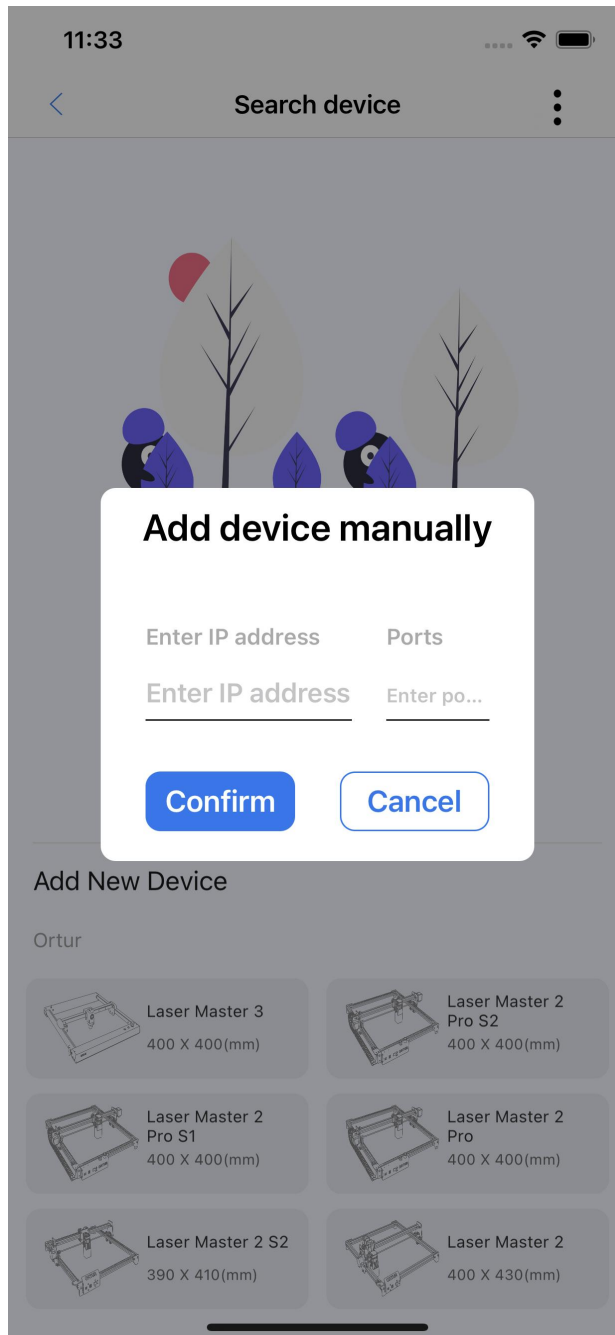


Image5.1.3Add devices manually

## 5.2 Confirm engraving machine parameters

### 5.2.1 Parameter picture

① When selecting equipment on the search page, a confirmation engraving machine parameter diagram will pop up (Image 5.2.1.1). Users can select laser modules according to their own models, and users can choose the system to provide laser modules or custom laser modules according to the actual situation.

### ② Confirm engraving machine parameters page:

1、 The system provides a laser module (Image 5.2.1.1): click the laser module to select the default module, which is also the most suitable laser module, which is relatively safe;

2、 Custom laser module (Image 5.2.1.2): User-defined laser module, which can be freely adapted;

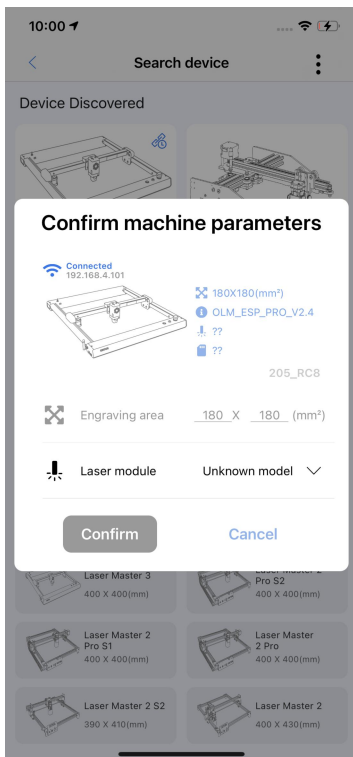


Image5.2.1.1 default

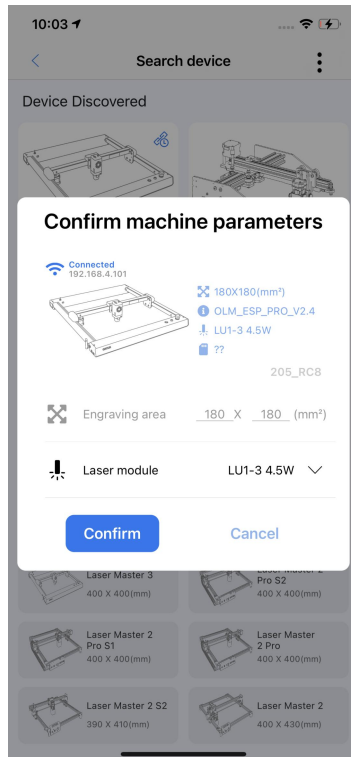


Image5.2.1.2 System Laser Module

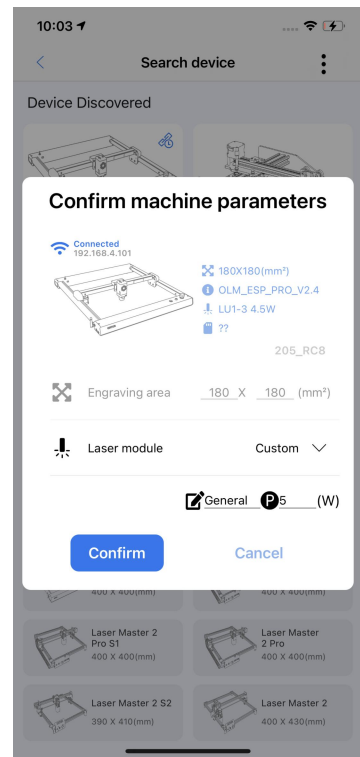


Image5.2.1.3 Customize laser parameters

### 5.2.2 Parameter Selection

①Component size: When the app and the engraving machine are in the same Wi-Fi condition, click the engraving machine on the search page, and the component size of the engraving machine will be automatically displayed in the pop-up parameter pop-up window, which cannot be modified.。

②Laser module: It is composed of LU type laser head and custom, which is directly related to the laser head of the user's own engraving machine. The laser head is very dangerous. It is forbidden to use it directly to people during use. There will be a system button to prompt whether to turn on the laser head, please engrave and use it under the condition of safety (as shown in Image 5.2.2)。

③After the adaptation is completed, click Confirm connection to enter the home page for the next step.

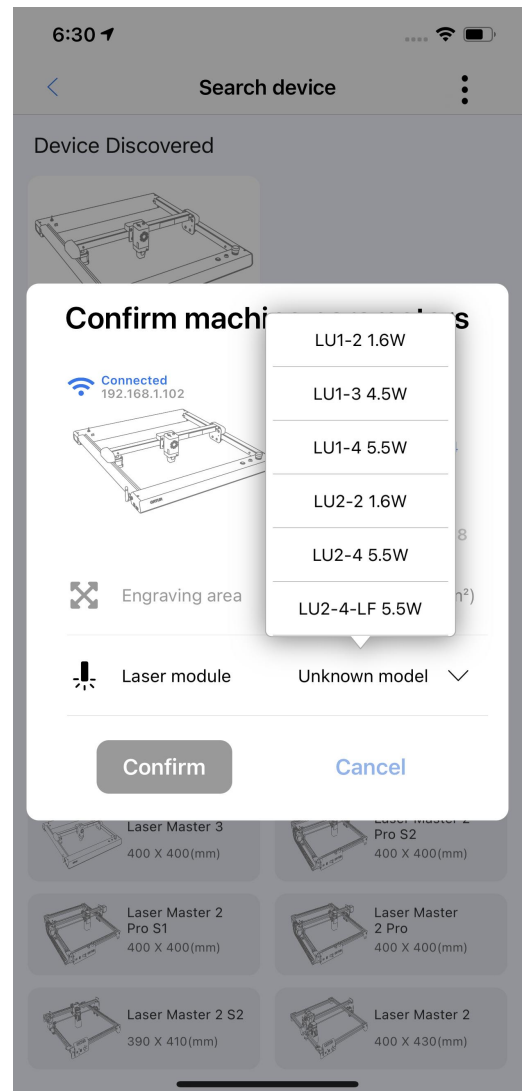


Image5.2.2 Parameter Selection

### 5.2.3 Select the parameters of the engraving machine (as shown in Image 5.2.3 to select the custom laser parameters)

① In the parameter selection, you can choose a custom laser head, and the following interface will appear, which consists of the nickname and power of the laser module, and the user can choose the name and parameters by himself.

② The user can customize and modify the parameter name of the engraving machine, and can also customize the input laser power to adapt.

③ After the adaptation is complete, click the Confirm button to proceed to the next step.

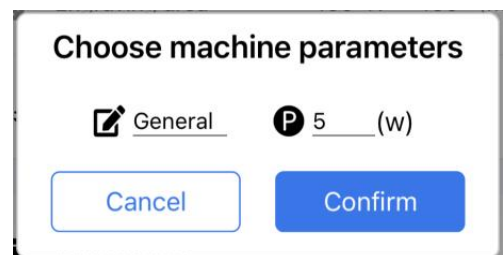


Image5.2.3 Select custom laser parameters

### 5.2.4 After confirming the connection (Image 5.2.1.2), it will return to the home page (Image 5.2.4)

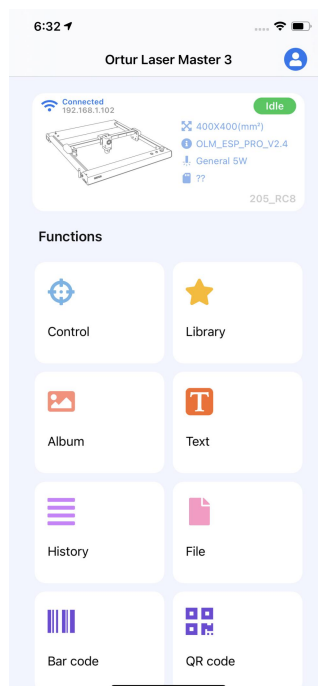


Image5.2.4 Home page after successful connection



## 5.3 Device connection display on the home page

### 5.3.1 Engraving machine configuration interface

①After the engraving machine is successfully connected, click the home page device module (mark B) to enter the engraving machine configuration interface (as shown in Image 5.3.1.1).

②After entering the engraving machine configuration interface, you can view the specific information of the engraving machine, such as engraving machine model (AUFERO 1 S2), engraving machine printing range (200mmX200mm), laser module (GENERL-5W), Wi-Fi, detailed information and firmware update (As shown in Image 5.3.1.1).

③Users can change laser modules, view file management (SD card), WIFI, detailed information, firmware update and other options on this page.

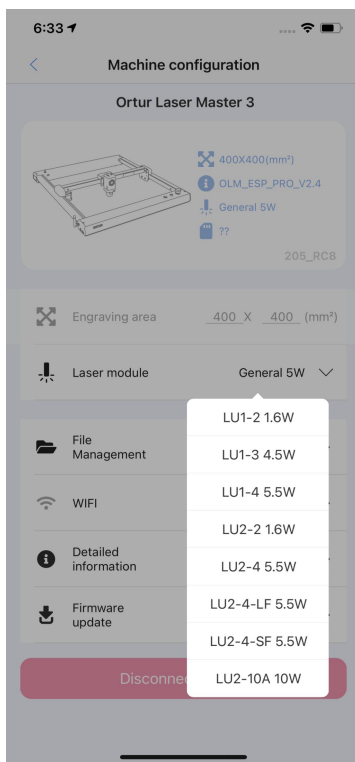


Image5.3.1.1Engraving machine configuration interface

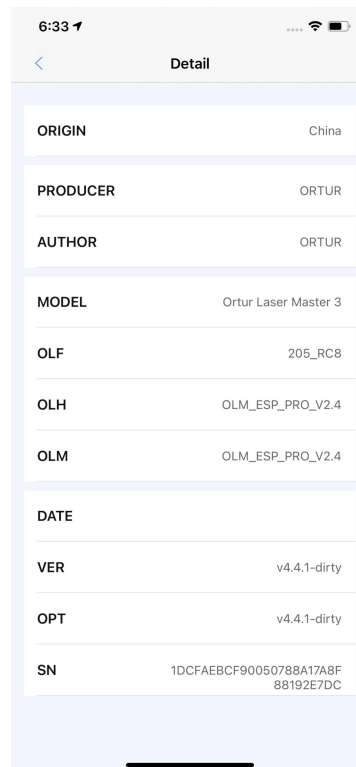


Image5.3.1.2Details interface

### 5.3.2 Reconnect interface

①When the app and the engraving machine are connected to the same Wi-Fi, when the engraving machine is disconnected or the connected WI-FI is disconnected, the following warning pop-up window will appear (as shown in Image 5.3.2)

②After the following pop-up window appears in the app, confirm that the engraving machine is turned on and the WI-FI connection is normal.

③Users can reconnect or re scan connections as needed.

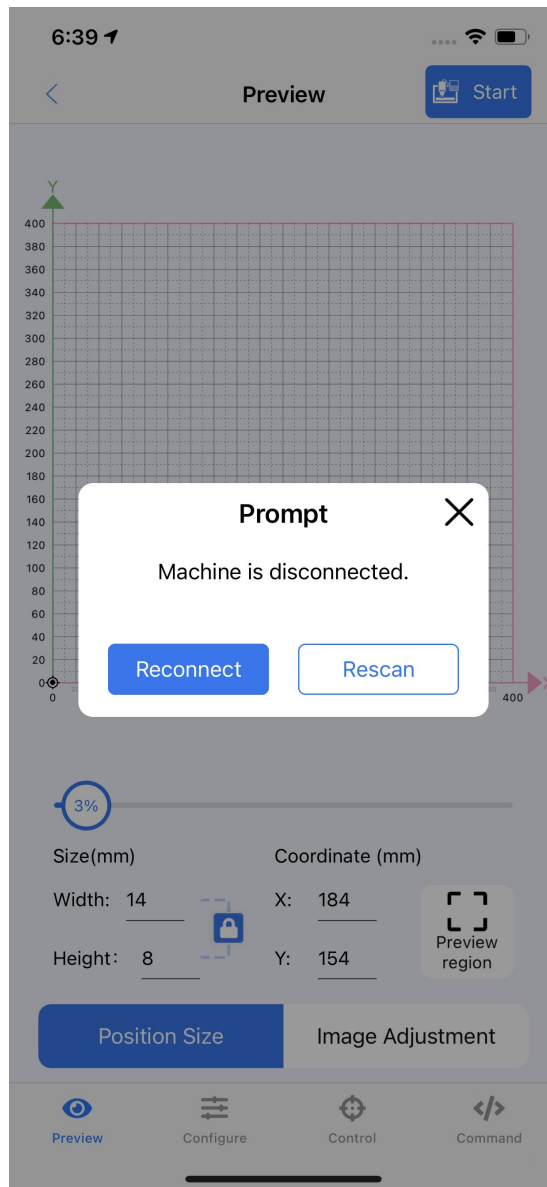


Image5.3.2Reconnect status page

## 5.4 Homepage status

The home machine card may have three connection states, namely unconnected, connected and device disconnected.

①The device is not connected: the device is in the state of no engraving machine and app connection (as shown in Image 5.4.1), you can click the search page to enter the search page to search for the device (as shown in Image 5.4.2, the search device page is described in detail in chapter 5.1).

②When the device is connected, the device and app are in normal state and can be printed normally (as shown in Image 5.4.3), click the card to view the device details.

③When the engraving machine encounters an abnormal situation after the device is connected and the engraving machine is disconnected (as shown in Image 5.4.4), the user can click the red button above the engraving machine picture to reconnect, or click the chain mark on the upper right to disconnect.

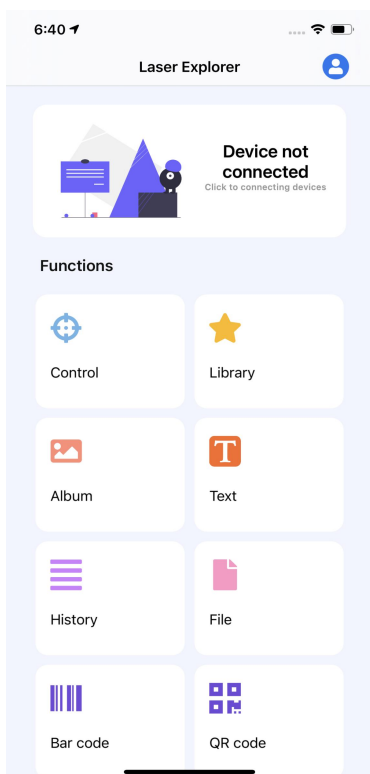


Image5.4.1Device not connected

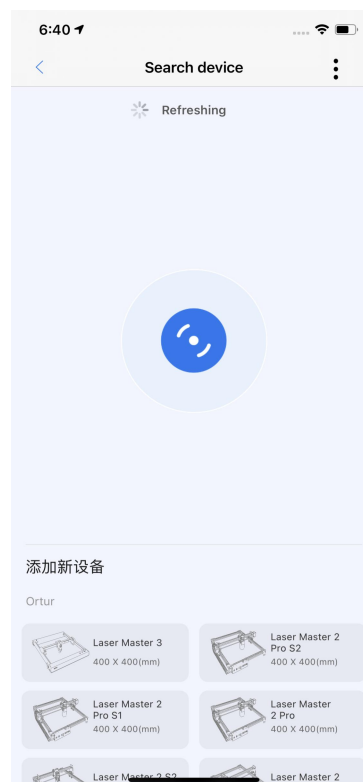


Image5.4.2 Search Page

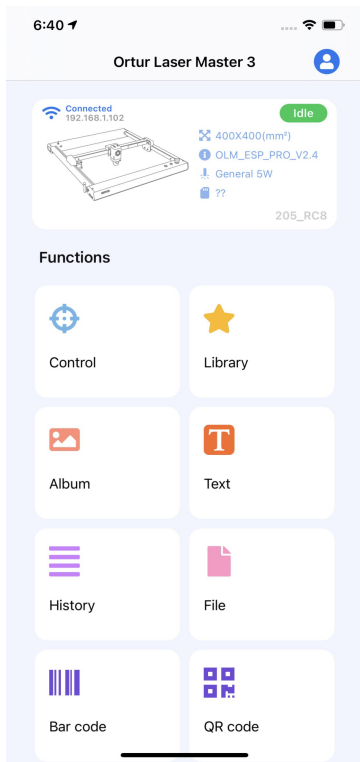


Image5.4.3 Device is connected

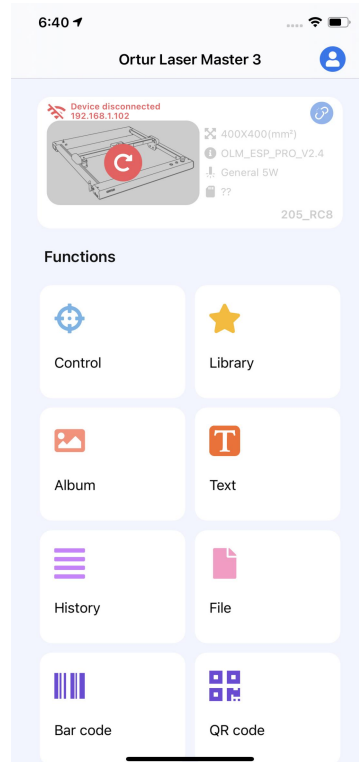


Image5.4.4 Device is disconnected

## 6 Controls and photo albums

①The home page function has been introduced in the previous article. In this chapter, some commonly used functions will be introduced in detail.

②Common functions include control box, photo album function, text function, material library function, history record function, file function, bar code and QR code function (as shown in Image 6.0), users can make corresponding selections on this page according to their needs.

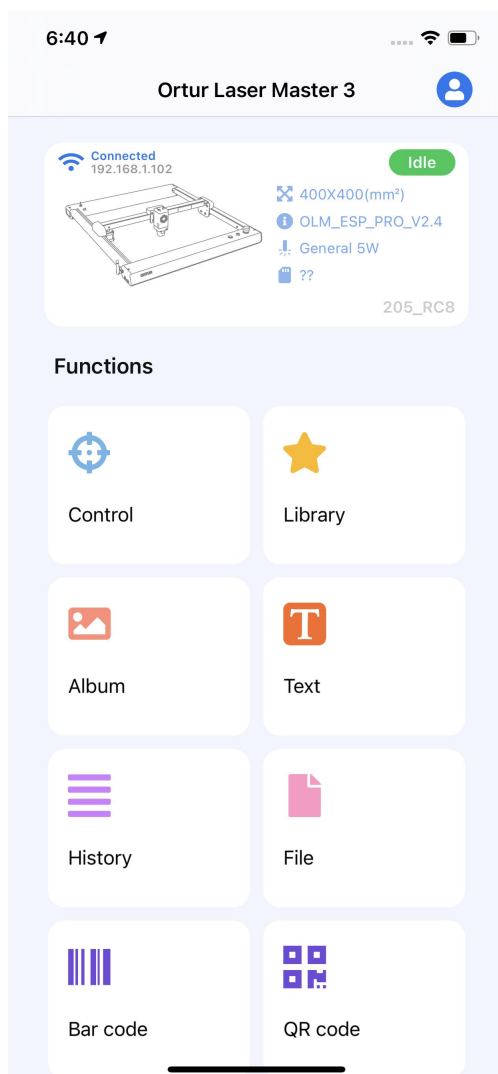


Image6.0Home Page

## 6.1 Control interface

①Click "Engraving Control" to enter the engraving control (as shown in Image 6.1).

②Engraving control status bar (label A) and control bar (label B):

A: Status bar, this card mainly displays the current status of the engraving machine, engraving speed, laser power and laser working position (WPOS); click on the folding corner to expand to display the mechanical coordinates (MPOS) and \$G information;

B: Device remote control, which includes button functions such as directional control, zeroing, and reset.

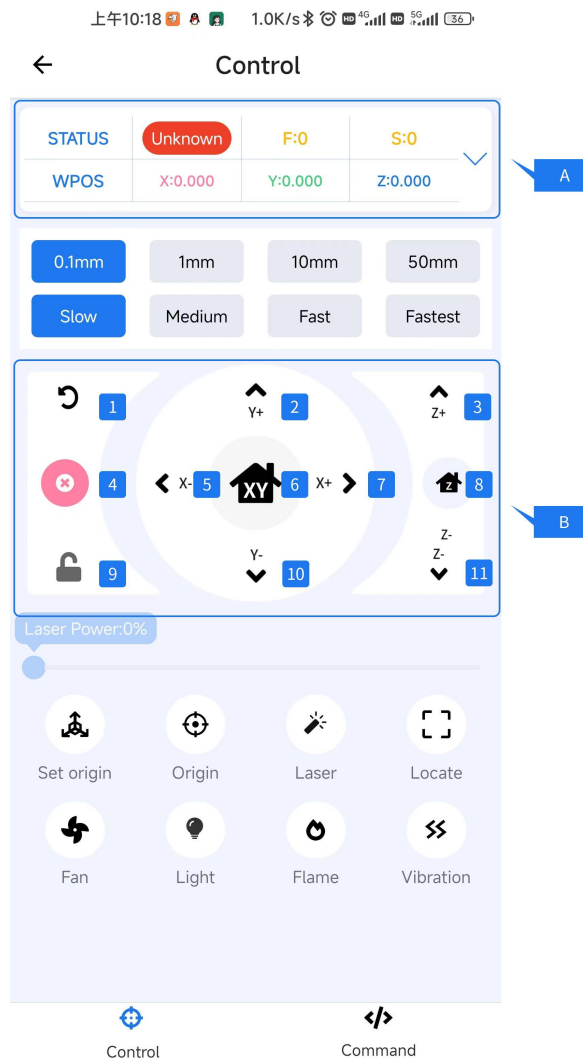


Image6.1 Engraving control interface

### 6.1.1 Status display box (Look at section A in Image 6.1)

① Status display (A-1): Indicates the current machine status, the machine has the following status:

- IDLE: Signal communication is normal;
- JOG: Running "single point movement";
- RUN: Running "Auto Motion";
- CHECK: Check equipment;
- HOME: Running "homing to zero";
- DOOR: Safety door;
- UNKNOWN: The signal status is not clear and needs to be reconnected;
- ALARM: Alarm state (unlocking "\$X" can remove this state);
- SLEEP: Sleep state;
- HOLD: Pause state;

STATUS	Idle		F:0	S:0		
WPOS	X:100.100	Y:0.000	Z:0.000			
MPOS	X:100.100	Y:0.000	Z:0.000	^		
GCODE	G0	G54	G17	G21	G90	G94
	G49	G98	G50	M5	M9	T0

② F: Instantaneous speed of the engraving machine, unit: mm/min;

S: Laser power is a parameter in the G code. Generally, the maximum value of the equipment is 1000, that is,  $(S/Max*100\%)$  is the power percentage of the laser head at this moment;

③ WPOS: X, Y, Z represent the current XYZ working axis coordinate position of the engraving machine, that is, the new position set by G92.

MPOS: X, Y, Z represent the current XYZ mechanical axis coordinate position of the engraving machine, that is, the zero point position after \$H is classified.

## ④ GCODE:

<b>Pattern grouping</b>	<b>Include code</b>
Sport mode	<b>**G0**</b> , G1, G2, G3, G38.2, G38.3, G38.4, G38.5, G80
Coordinate system selection	<b>**G54**</b> , G55, G56, G57, G58, G59
Plane selection	<b>**G17**</b> , G18, G19
Distance mode	<b>**G90**</b> , G91
Arc IJK Distance Mode	<b>**G91.1**</b>
Feedrate mode	G93, <b>**G94**</b>
Unit mode	G20, <b>**G21**</b>
Tool radius compensation	<b>**G40**</b>
Tool length offset	G43.1, <b>**G49**</b>
Program mode	<b>**M0**</b> , M1, M2, M30
Spindle status	M3, M4, <b>**M5**</b>
Coolant status	M7, M8, <b>**M9**</b>



### 6.1.2 Remote control parameter selection (see above part B in Image 6.1)

Above section B, there are two lines for configuration of print speed and distance, here labeled upper and lower.

1 Upper column: 0.1mm, 1mm, 10mm, 50mm represent the distance moved by the remote control bar of the device once a single click;

2 Lower column: slow speed (2500mm/min), medium speed (5000mm/min), fast speed (7500mm/min), extremely fast (10000mm/min), indicating the current moving speed.

### 6.1.3 Device remote control bar (see the label B in Image 6.1, where the numerical order is based on the label shown in the Image)

B-1: Reset, soft reset the device, and reset will enter the ALARM state in the running state;

B-2: After clicking the button, the device will move along the positive direction of the X axis at the distance and speed selected by the remote control parameters;

B-3: After clicking the button, the device will move along the positive direction of the Z axis at the distance and speed selected by the remote control parameters;

B-4: Stop jogging: When the device is in JOG mode, clicking it will stop the movement at the moment;

B-5: After clicking the button, the device will move along the positive direction of the X axis at the distance and speed selected by the remote control parameters;

B-6: After clicking the button, the X, Y, Z axes will be reset, and the X, Y, Z axes will be moved to the mechanical origin and the coordinates will be reset to 0;

B-7: After clicking the button, the device will move along the negative direction of the X-axis at the distance and speed selected by the remote control parameters;

B-8: After clicking the button, the device will return to the 0 point of the Z axis of the relative coordinate;

B-9: Unlock: When the device is in the "ALARM" state, it will be converted to IDLE and run normally after clicking;

B-10: After clicking the button, the device will move along the negative direction of the X axis at the distance and speed selected by the remote control parameters;

B-11: After clicking the button, the device will move along the negative direction of the Z axis at the distance and speed selected by the remote control parameters.

#### 6.1.4 Device function control (see Image 6.1 below part B)

1、 Set the starting point: Set the relative coordinate as 0 point, and set the mechanical coordinate at this time as 0 point.

2、 Back to the starting point: the device will move to the set relative origin.

3、 Laser: Turn on or off the laser; pay attention to the safety of the laser, prevent exposure to glasses before turning on, and always pay attention to fire protection after turning on. After turning on the laser, you can drag the upper slider to adjust the laser power.

4、 Positioning: Positioning the engraving range function; (Note: After setting a new zero point, the point range may exceed the soft limit, and you need to reset and unlock the device to unlock the device; when entering the preview page, the image engraving range will be positioned.)

5、 Fan: Turn the fan on or off.

6、 Lights: turn lights on or off.

7、 Flame check: Turn on or off the flame check; after turning on, if the device burns, it will stop and the buzzer will sound an alarm. Note: For your safety, it is not recommended that you turn off flame detection.

8、 Vibration detection: Turn vibration detection on or off; after turning it on, the device will stop running if it vibrates.

## 6.2 Command interface

6.2.1 Command button introduction (see the bottom of Image6.2.1 from left to right, from top to bottom):

① Send command button: After opening, you can see the instructions sent by the client to the device.

② Receive command button: After turning it on, you can see the commands sent by the device to the client.

③ Start time stamp: After opening, you can see the time when the command was accepted/sent.

④ View status information: After turning it on, you can see the status information of the device (the status of the GRBL reply after sending ?).

⑤ Bottom: After startup, when a new command is received, it will be bottomed to the latest line.

⑥ Add custom button: Add shortcut command to send command conveniently and quickly (see chapter 6.2.2 for details).

⑦ Input field: used to input commands; click the right-up arrow to open the history record, and it will be sent directly after selection.

⑧ Send command: After clicking, the command in the input field will be sent.



Image6.2.1 Command page

6.2.2 Add custom command button introduction (see the bottom of Image6.2.2 from left to right, from top to bottom):

① Custom button: Add shortcut commands to send commands conveniently and quickly.

②How to make a custom button:

I After clicking the Add Custom button, the custom button bar will be expanded;

II Select the custom button, and the Add custom button card will pop up. Select your desired name, image label, and code according to your needs; after clicking OK, this command button will be added to the custom button bar, and the entered code will be sent after clicking.

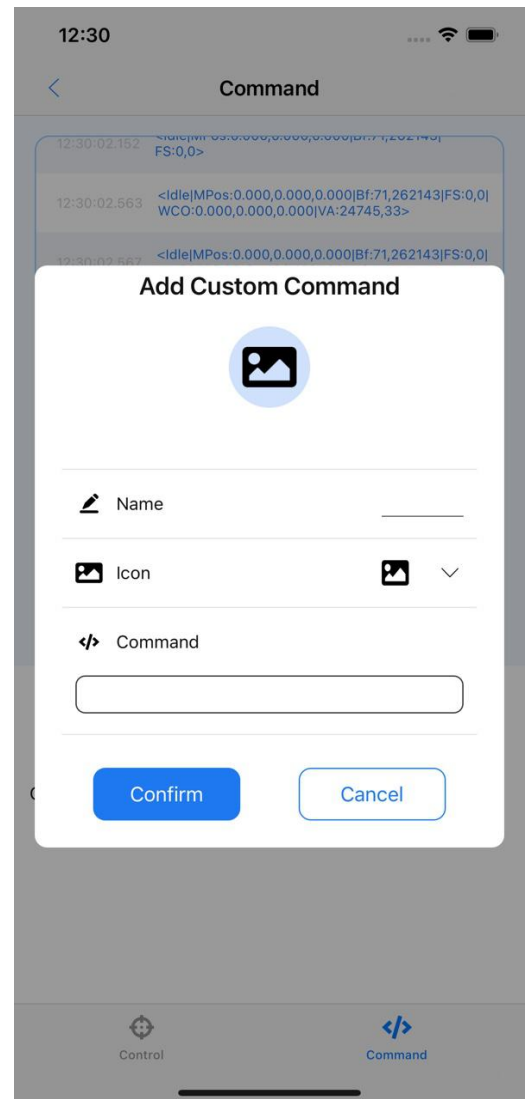


Image6.2.2Add custom commands

## 6.3 Album frame

①Users can enter the album interface by clicking the album box function on the home page to perform engraving operations on photos, and at the same time, they can use the photo button in the upper right corner to take photos and engrave (as shown in Image 6.3)

②The functions that can be realized in the album interface are:

I Shooting: The user can click the photo button in the upper right corner to take a photo, and engrave the scene on the spot. The quality of the photo shooting will affect the printing effect;

II Select photo: The user can view the photo of the camera on the current album page, and can freely select the photo of the camera to print. After selecting, it will directly enter the picture editing interface for the next engraving operation.

③ This interface is the entrance of image engraving, the user can freely select the image to enter the real-time laser engraving preview interface.

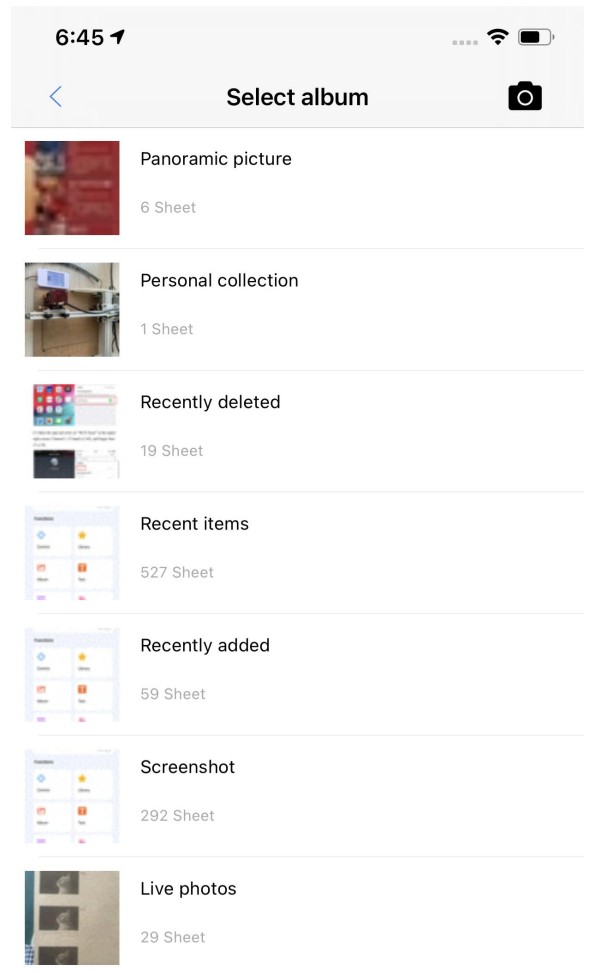


Image6.3Album Frame

## 7.1 Preview interface

① Enter the preview interface: After the user selects images, texts, material library materials, historical records, QR code printing, bar code printing and other printing materials on the home page, click Next to enter the preview interface.

② In the preview interface, the size and position adjustment interface is entered by default, and the size and position offset of the printing material can be edited and set (as shown in Image 7.1.0.1).

③ Click the image adjustment button to adjust the brightness, contrast and white threshold of the printing material on this interface (as shown in Image 7.1.0.2).

④ After the preview page is adjusted, you can also enter the engraving configuration interface (section 7.2), the control interface (section 6.1) and perform final engraving (click the print button in the upper right corner).



Image7.1.0.1 Engraving preview interface

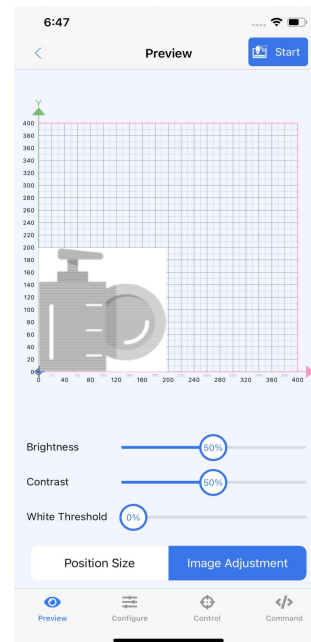


Image7.1.0.2 Engraving preview interface

(size and position)

(image adjustment)

### 7.1.1 Location Size

①The grid map is the maximum printing range of the engraving machine, and the user can freely drag the target.

②Below the grid, the user can freely change the dimensions of the target, including width and height. When the lock icon on the right is locked, the width and height will maintain a certain ratio.

③The user can change the print position by setting the coordinate value, or drag to set the print position.

④After configuring the materials, you can click Print in the upper right corner to enter the engraving progress interface, and the engraving machine officially enters the engraving work.



Image7.1.1.1 Grid Diagram



## 7.1.2 Image adjustment

①Click the image adjustment button in the bottom button to enter the image adjustment interface.

②On this page, you can adjust the contrast, brightness and white threshold of the printed material. Set the picture effect by dragging the slider to change the percentage on the right.

③After the setting is completed, you can click Print in the upper right corner to enter the engraving progress interface, and the engraving machine officially enters the engraving work.

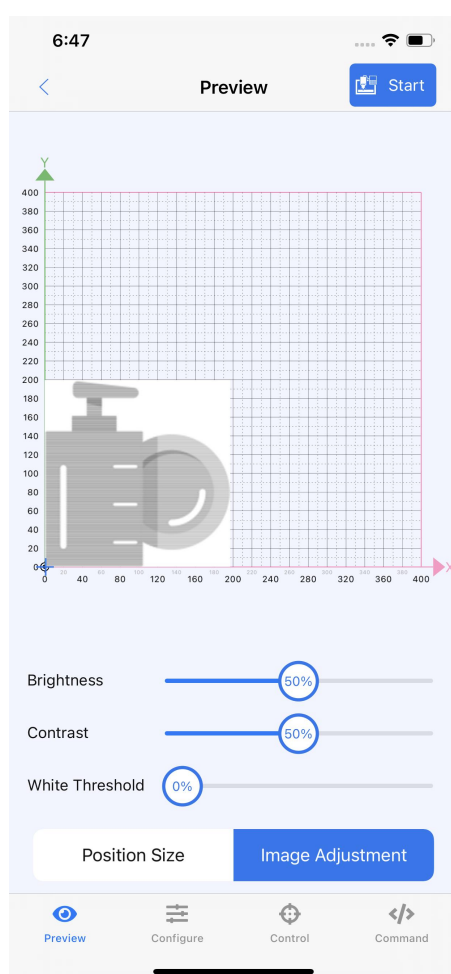


Image7.1.2.1 Image adjustment

## 7.2 Configuration Interface

①Click the engraving configuration button at the bottom of the preview interface to enter the engraving configuration interface (as shown in Image 7.2.1)

②The engraving configuration interface consists of two parts:

Part A: Engraving parameter card, the data introduction of this parameter card is as follows:

- 1. Printing speed; 2. Laser power; 3. Engraving mode; 4. Material type. 5 Click to enter the parameter library.

Part B: Engraving parameter configuration, users can con image engraving parameters here。

③For the detailed introduction of these two parts, please refer to Sections 7.2.1 and 7.2.3. No detailed introduction is given here. After the configuration, you can enter the control interface (section 6.1). Click print in the upper right corner to enter the engraving progress interface, and the engraving machine officially enters the engraving work.

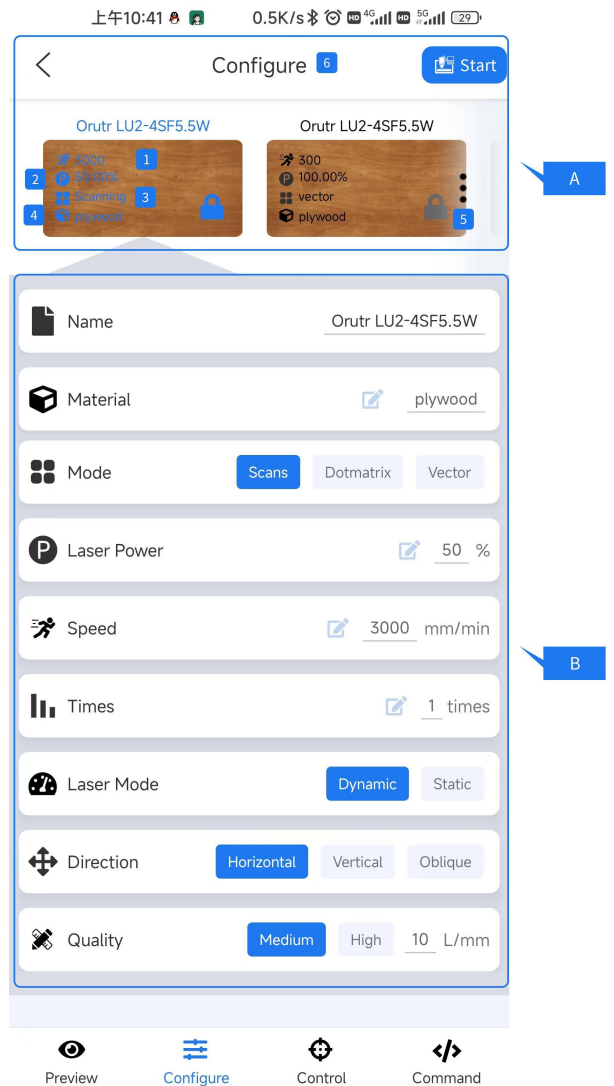


Image7.2.1 Engraving configuration interface

### 7.2.1 Quick Parameter Card (Part A in Image 7.2.1)

- ① First of all, please refer to Image 7.2.1 in 7.2 for detailed parameter introduction.
- ② Name on the top of the card: Laser module definition (laser code + wattage)

### 7.2.2 Introduction to the various functions of the parameter card (Part B in Image 7.2.1):

- 1、 Speed: The speed when engraving or cutting the pattern, in mm/min.
- 2、 Power: The power when engraving or cutting the pattern.
- 3、 Engraving method: M3 is used by default for cutting, and M4 is used by default for vector
- 4、 Engraving material: Use the specified engraving material for engraving.
- 5、 More parameters: enter the more parameter card interface, 7.2.2 More parameter cards (part B in Image 7.2.2).
- 6、 Parameter name: used to name the engraving parameter group.
- 7、 Material type: used to identify the engraved object, and the material type can be customized and edited.
- 8、 Engraving mode: It consists of three modes: scan, dot matrix and vector, and the vector can trigger the sub-option vector mode.
- 9、 Vector mode: Triggered by the vector in the engraving mode, it consists of outline, fill, and center line. Other center lines are repelled from outline and fill. Fill and outline can be selected individually or in combination.
- 10、 Laser power: Used to limit the maximum power value of the laser head.
- 11、 Engraving speed: Used to limit the maximum speed of engraving; when it exceeds the maximum speed of the equipment, the equipment shall prevail.
- 12、 Engraving times: used for repeated engraving; you can use the Z-axis offset to sink the

engraving height and adjust the new focus.

13、 Laser mode: dynamic is the G code laser engraving mode of M3; constant is the G code laser engraving mode of M4.

14、 Engraving direction: it consists of horizontal, vertical and oblique directions.

15、 Engraving quality: medium progress is 10 lines/mm, high precision is 20 lines/mm, and 1-20 lines/mm can be selected for customization.

### 7.2.3 Parameter library (in part A of Image 7.2.1, click the button No. 5 to enter the display as shown in Image 7.2.3)

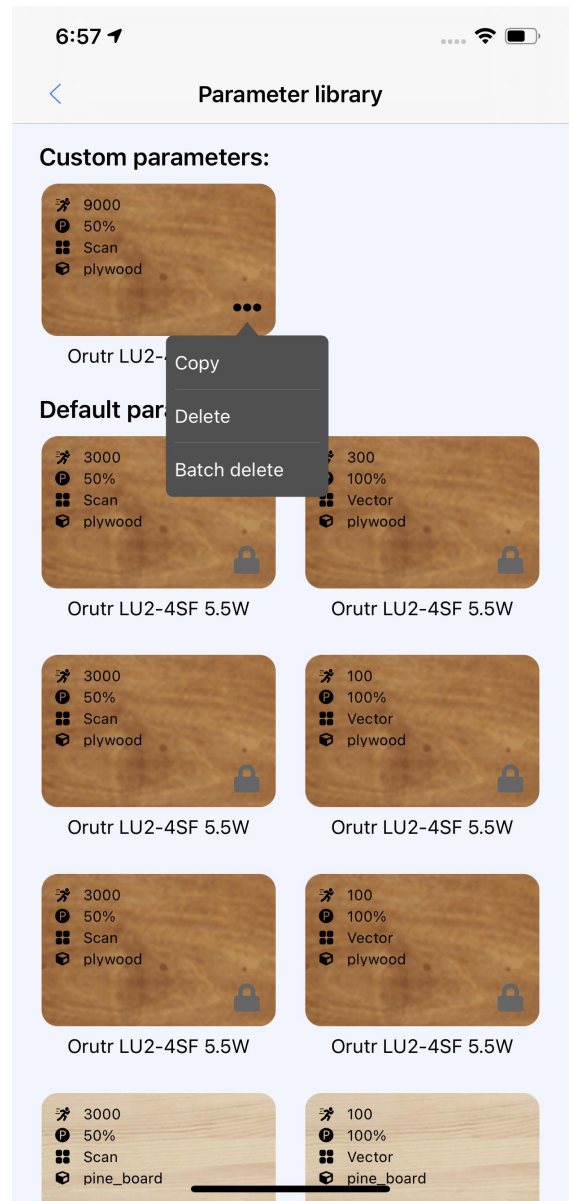
① Custom parameters: The custom parameter library contains customer-defined parameters, which are used when engraving again.

② Preset parameters: Due to the existence of different engraving methods and objects, the parameters during engraving are different, the preset parameters provide corresponding parameter values; customers can also modify and adjust the preset parameters, which will be added as new custom parameters after modification and adjustment.

③ More: consists of copy, delete, batch delete.

④ After selecting the corresponding parameters, you can click the return button in the upper left corner to return to the configuration interface for the next step.

Image 7.2.3 Parameter Library



## 7.3 Control interface and command interface

### 7.3.1 Control interface

The engraving control interface is composed of Image 7.3.1 (see Chapter 6.1 for details), which will not be explained in detail here:

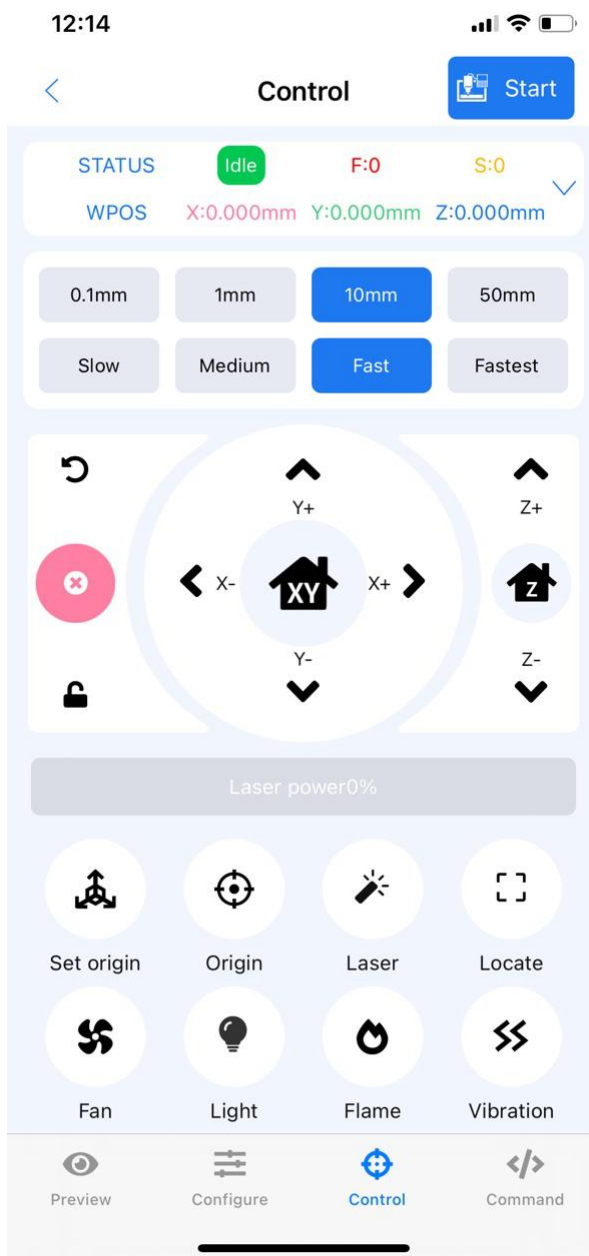


Image7. 3. 1Control interface

## 7.3.2 Command interface

The command interface is composed of Image7.3.2 (see Chapter 6.2 for details), and will not be explained in detail here:



Image7. 3. 2 Command interface

## 7.4 Confirm engraving

Click the engraving icon button on the upper right, and a prompt box will pop up:

### 7.4.1 Focusing

① Check focus work: accurate focus results in better engraving.

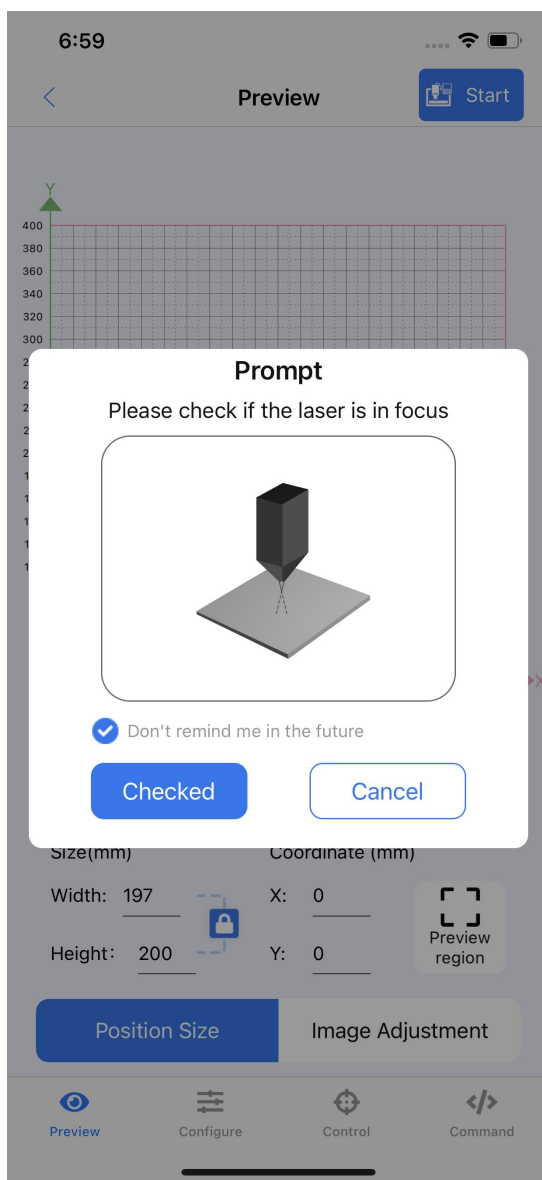


Image7.4.1 Focusing



1) LU series: Laser focusing can use corresponding shortcut focusing methods, see Table

7.4.4.

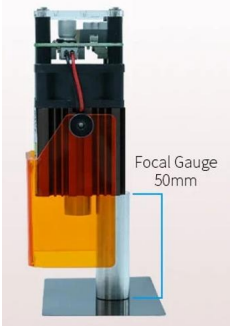
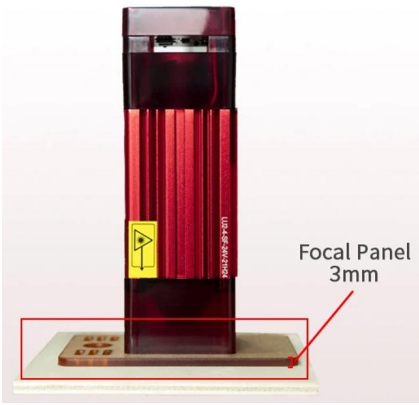

Laser module name	Focus method
LU2-2	 <p>Focal Gauge 50mm</p>
LU2-3	
LU2-4	
LU2-4LF	
LU2-4SF	 <p>Focal Panel 3mm</p>
LU2-4SF Enhanced Edition	
LU2-10A	 <p>对焦棒顶住雕刻物</p>

Table 7.4.4

2) Other laser heads: Please refer to the corresponding focusing method, or observe the size of the focus to determine its focusing accuracy (Note: When the laser will hurt human eyes, pay attention to wearing anti-laser glasses before focusing observation).

② Checked: After checking that the focus is accurate, click the "Checked" button and cancel to return to the preview interface to reset the parameters.

### 7.4.2 Select engraving method and confirm engraving times

After confirming the above operation

① Choose engraving method:

1) Start at the preview layout position (Image 7.4.2.1): You need to manually move the laser head position to the starting point of the device, see 7.4.1 for details.

2) Start from the position of the laser module (Image 7.4.2.2): set the current laser head as the starting point for engraving (Note: this operation has the risk of over travel or a soft limit alarm, over travel will cause equipment strain); you can click "Preview" Range" to view the engraving area, see 7.4.2 for details.

② Engraving times: for repeated engraving, more widely used in cutting.

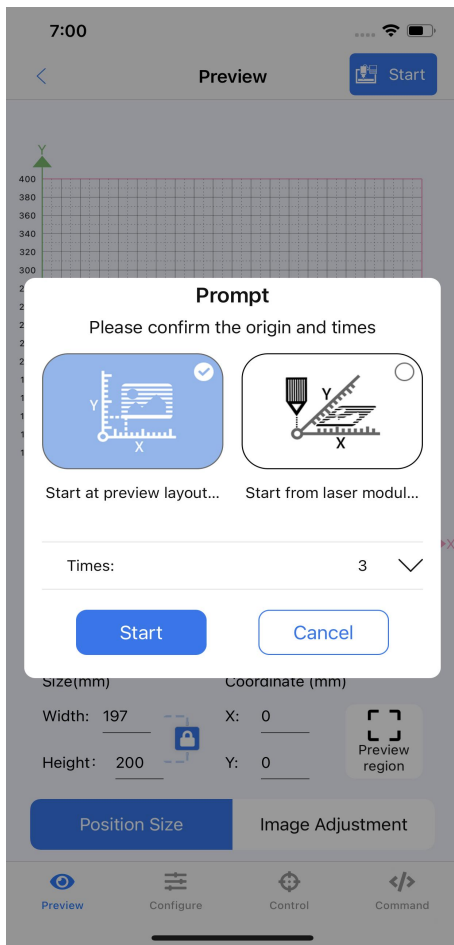


Image7.4.2.1 Start at preview layout position

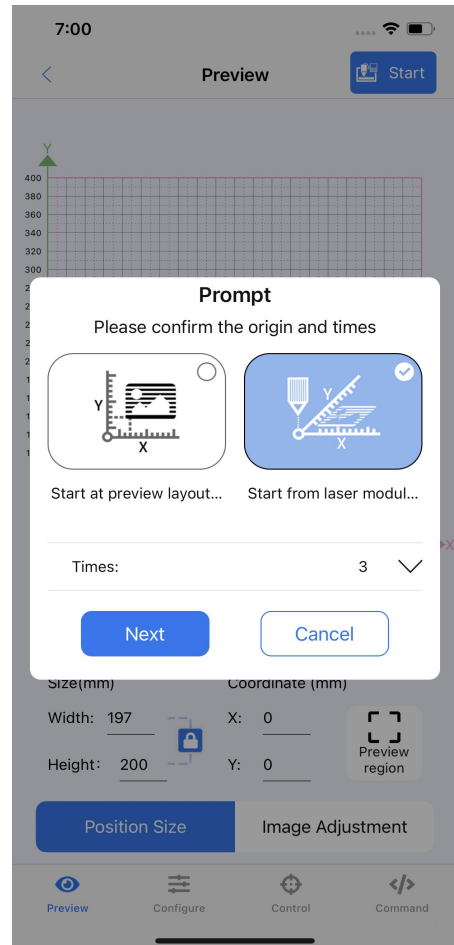


Image7.4.2.2 Start at the laser module position

### 7.4.3 Start at preview layout position

①Next step: Click the "Next" button in Image 7.4.2.1(2), a prompt will pop up: please reset the laser head as shown in the Image.

②Start engraving: Click the "Start engraving" button in Image 7.4.3, the App prompts to turn the G-code progress bar.

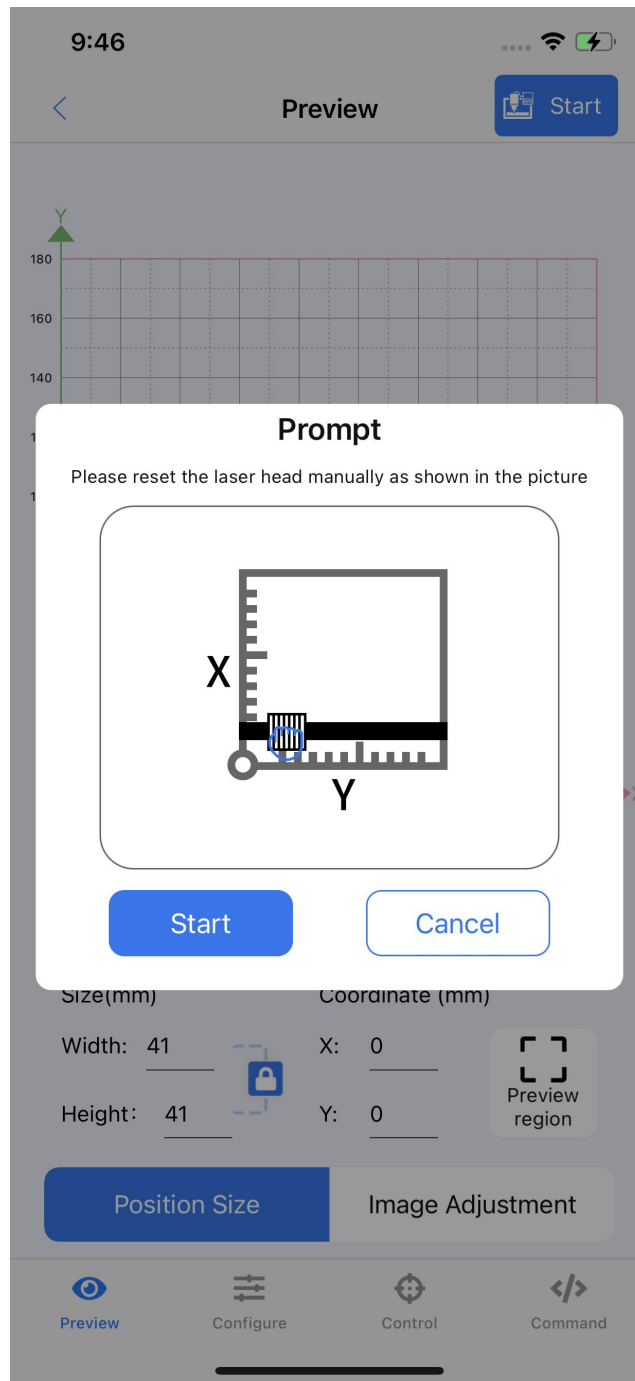


Image7.4.3Start at preview layout position

#### 7.4.4 Start at the laser module position

①Next step: Click the "Next" button in Image 7.4.2.1.

②Preview range: After clicking, the engraving machine will engrave the border of the picture with 0.5% laser power. The user needs to confirm that the engraving range is within the effective travel range, and the machine does not collide with the machine.

③Start engraving: If step ② is not installed, click the "Start engraving" button in Image 7.4.4. If the machine hits, please click Cancel, move the laser module again, and repeat the engraving process.

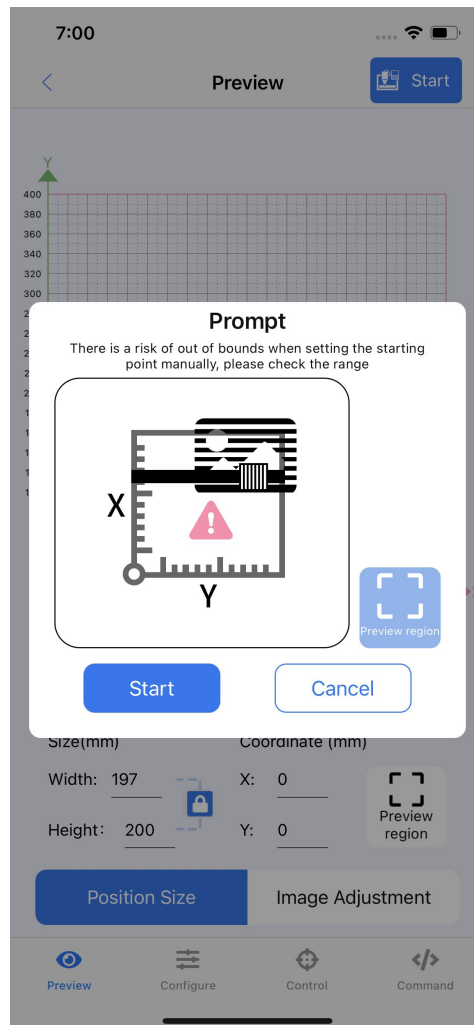


Image7.4.4Start at the laser module position

### 7.4.5 Offline engraving

Wait for the progress bar to reach 50% to complete the G-Code file generation. After generation, upload it to the device for offline engraving. For details, see Chapter 7.5; Seechapter 7.4.5

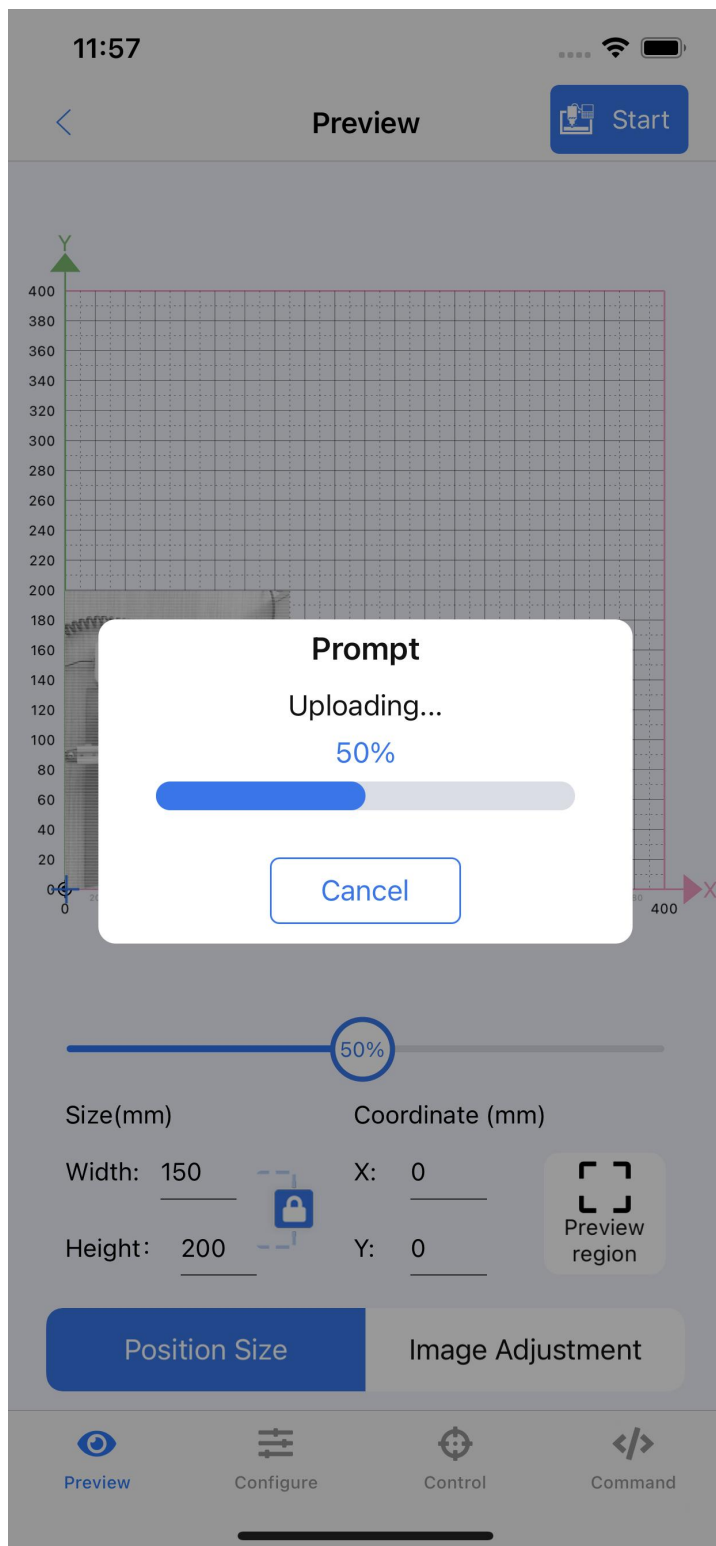


Image7. 4. 5 Offline engraving

### 7.4.6 Online engraving

If the offline engraving file upload fails (SD card is not detected), and the offline engraving cannot be performed, it will prompt whether to run online engraving; click re-upload and try to upload the offline engraving file again; if you click online engraving, the device will Do real-time sculpting.

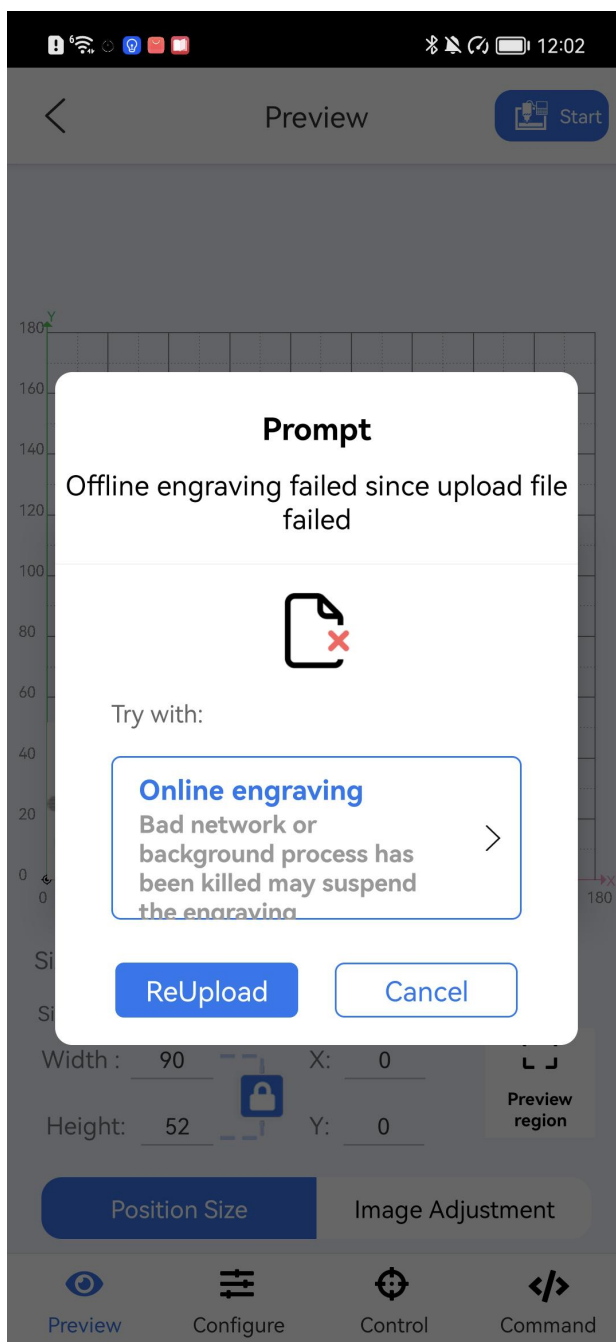


Image7.4.6 Online engraving

## 7.5 Engraving progress (start engraving)

① After the engraving process is confirmed, you can enter the engraving progress interface (as shown in Image 7.5)

② The engraving progress interface consists of two parts:

Part A: This card mainly shows the engraving progress, engraving position and engraving times.

Part B: Here mainly displays the engraving machine status, engraving parameters, engraving laser head position, engraving progress bar, usage time and remaining time.

③ For the detailed parameter introduction of these parts, please refer to the following subsections, which will not be introduced in detail here. Click to run below to start engraving.

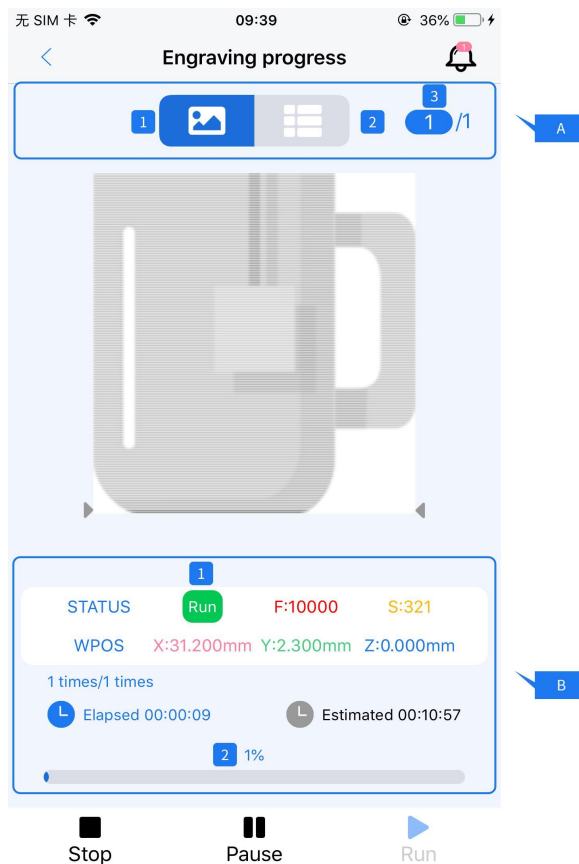


Image7.5 Engraving Progress Page

### 7.5.1 Picture display of engraving progress (Image 7.5 Part A, where the Arabic numerals represent the markings in the picture)

No. 1: Check the engraving progress in real time. The gray part means the engraving has been completed, and the remaining part means no engraving.

No. 2: No function.

No. 3: Here represents the number of prints, which are the number of prints/total number of prints.

### 7.5.2 Engraving progress interface (Image 7.5 Part B, where the Arabic numerals represent the labels in the image)

① See 6.1.1 for the meanings of the status bar in the upper left corner and the rest of the letters.

② The bottom mainly includes the following components:

Printing times: in the upper left corner, as shown in the Image, it has been run once, and it has been run once in total;

Above the slider: the current elapsed time and the remaining time respectively;

Slider: Indicates the current engraving progress, and 100% of the slider means the engraving is complete.

### 7.5.5 Bottom adjustment bar

The white control bar at the bottom has three functions: stop, pause, and run.



## 8 Common Functions (Marked part C in Image 4.1)

①The home page function has been introduced in the previous section. In this chapter, some commonly used functions will be introduced in detail.

②Common functions include control box, photo album function, text function, material library function, history record function, file function, bar code and QR code function (as shown in Image 8.0).

③Users can make corresponding choices on this page according to their needs to improve the engraving efficiency, and at the same time perform the next engraving print preview interface (see Chapter 7 for details).

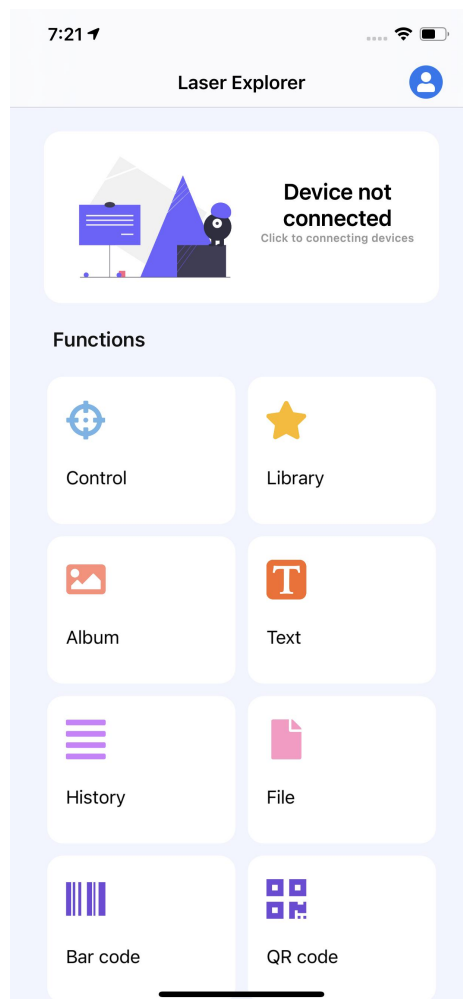


Image8.0 主页

## 8.1 Text box

①Users can enter the text engraving interface by clicking the text function on the home page to perform text engraving (such as Image8.1).

②The text engraving interface is composed of two parts as shown in Image8.1:

1Text input part: realize the function of character input, the upper limit is 50 characters.

2Text format modification part:

Font setting function: Users can choose different fonts.

Cutout function: Users can display the current text as cutout.

Italic function: the user can set the current text to be italicized.

The function of displaying uppercase letters: the user can display the input lowercase letters as uppercase.

Add underline function: User can add underline below the current text.

③This interface is the entrance of text laser engraving. After completing the setting, it will enter the laser engraving preview interface (see Chapter 7 for details).

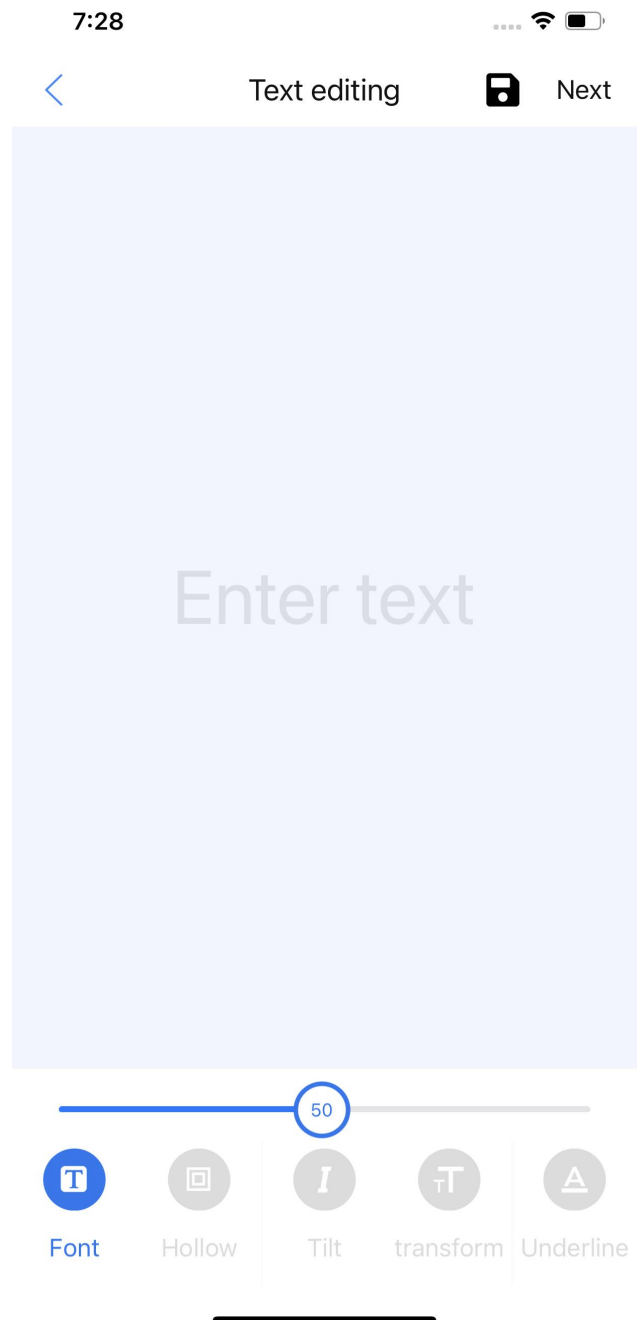


Image8.1Home page

## 8.2 Material library

①Users can enter the material library interface by clicking the material library function on the home page, and can freely select materials for laser engraving (as shown in Image 8.2).

②The material library is the built-in picture material of the app. If you want to engrave your own material, please go back to the home page and select the picture engraving function.

③This interface is the entrance to the engraving of the material that comes with the system. The user can enter the engraving preview interface by selecting the material and clicking to enter the next step (see Chapter 7 for details).

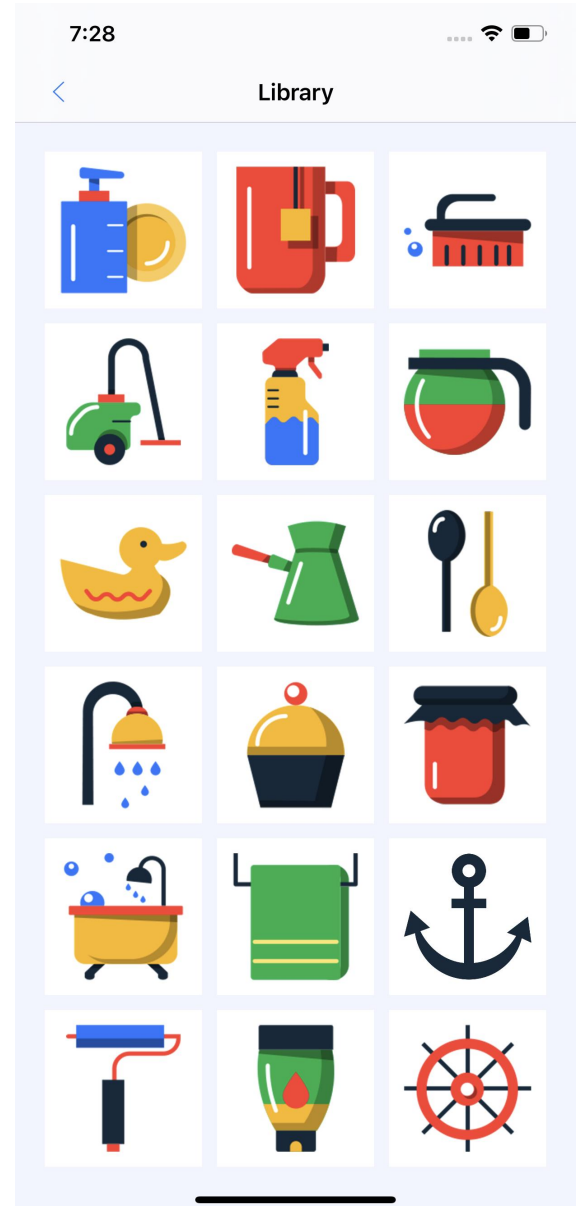


Image8.2 Material library interface

## 8.3 History Record

①Users can click to enter the history record interface, where all the records engraved by the user in this account will be stored.

②The history interface includes the following functions:

1 History card: jump to the corresponding record point, you can reselect or edit the preview engraving.

2 More options: There will be a button click operation in the lower right corner of each record node card. This function can realize renaming, deleting and batch deleting of cards.

③There is a search button in the upper right corner, you can search the print records, and after searching, you can choose to re-edit or engrave and print.

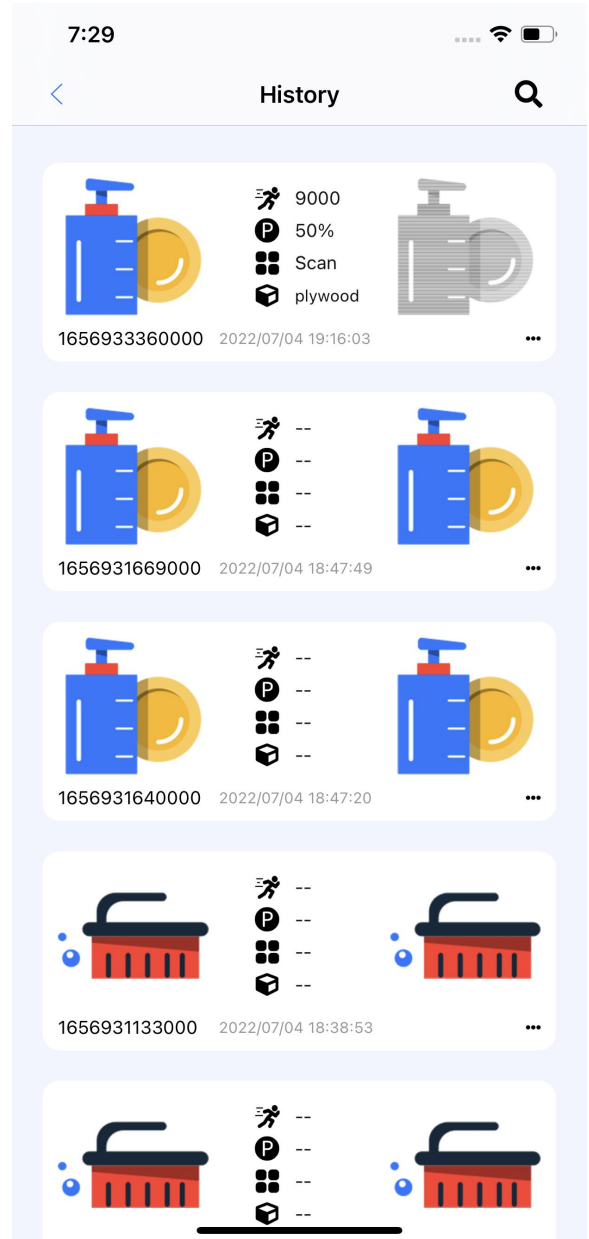


Image8.3 History Record

## 8.4 File box (this function is not open yet)

①On the main page, you can click to enter the file interface. This interface can select the engraving interface for its own files, which can include pictures or texts for engraving (as shown in Image 8.4).

②On this page, you can click on all the materials in the page, whether it is a picture or a text, it will enter the corresponding operation preview interface (see Chapter 7 for details) to carry out different engraving operations, and users can freely choose engraving.

③In this interface, you can freely select all the existing materials and carry out the corresponding engraving.



Image8.4 File Interface

## 8.5 Bar Code

① You can enter the bar code printing interface through the home page, where the user can customize the bar code for engraving (as shown in Image 8.5).

② The interface functions are as follows:

1 Bar code preview interface (see Chapter 7 for details): Real-time preview of custom input text converted to bar code display.

2 Text content: 30 text letters or character symbols can be entered, and the QR code preview can be refreshed in real time.

3 Save button: Save the bar code displayed at the moment.

③ This interface is for bar code setting. After the user has customized the bar code, he can click Next in the upper right corner to enter the preview interface (see Chapter 7 for details).

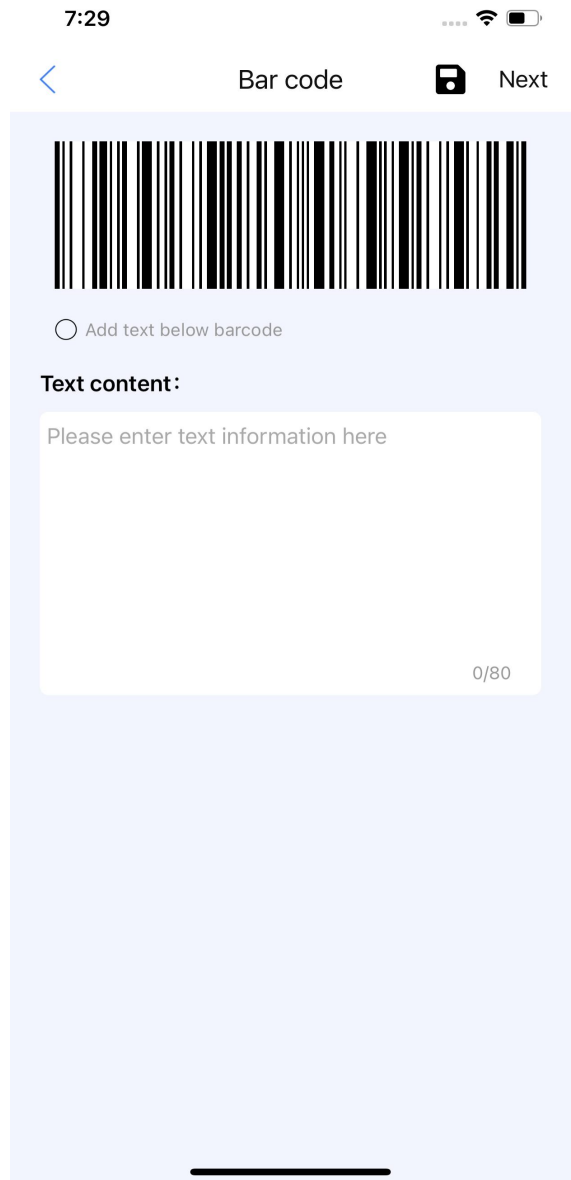


Image8.5 Bar code interface

## 8.6 QR code

①You can enter the QR code printing interface through the home page, and users can customize the QR code for engraving on this page (as shown in Image 8.6).

②The interface includes the following functions:

QR code preview: Preview the display of custom input text converted to QR code in real time.

Text content: 300 text letters or character symbols can be entered, and the QR code preview can be refreshed in real time.

Save: Save the QR code displayed at the moment.

③This interface is the interface for setting the QR code. After the user has customized the QR code, he can click Next in the upper right corner to enter the preview interface (see Chapter 7 for details).

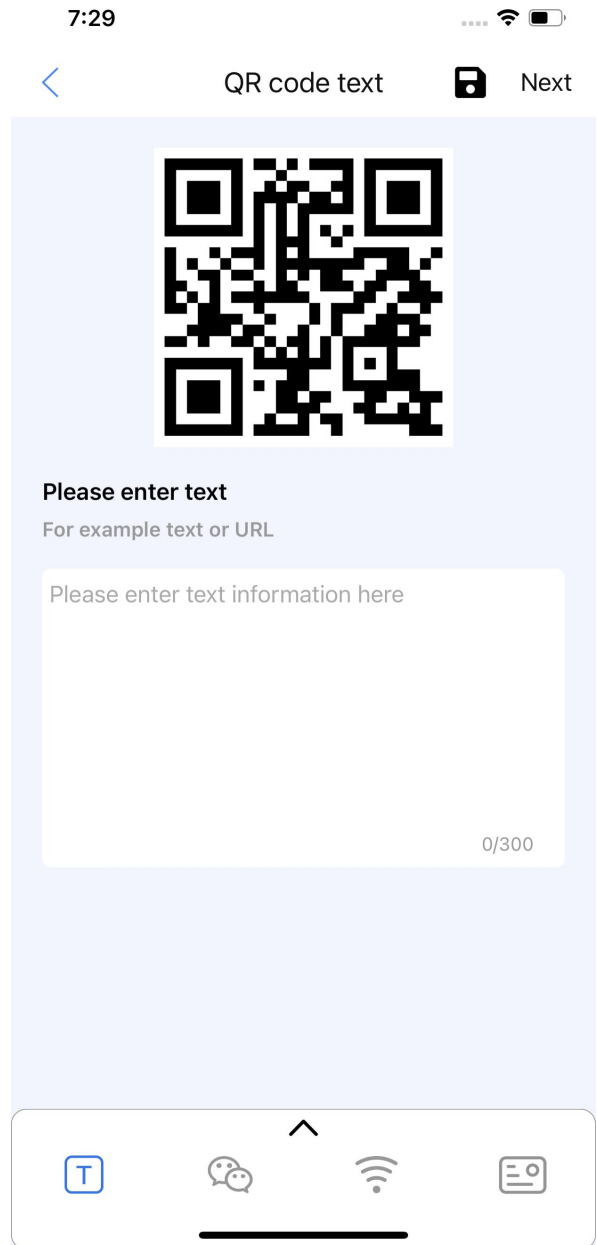


Image8.6 QR code interface

## 9 Title bar (Image 4.1 Mark Part A)

### 9.1 Title Bar

① Name of engraving machine (Image 9.1.0.1): The text area in the middle of the title bar will display the model of the engraving machine connected to the user, and the user can identify the connected engraving machine through this text area.

② Sidebar button (character icon button): The user clicks this button to display the sidebar (as shown in Image 9.1.0.2), and can enter the user information modification interface, view or modify the login user information, enter the help document for operation help, and check the app update and switch the engraving machine language.

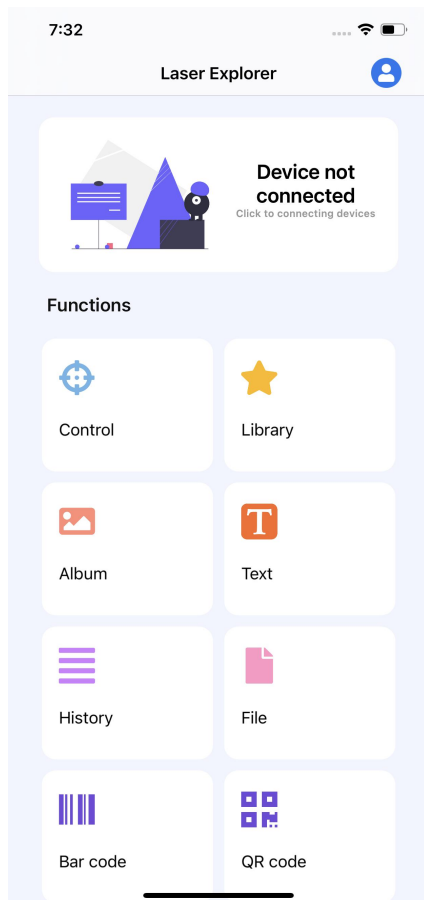


Image9.1.0.1Home title bar

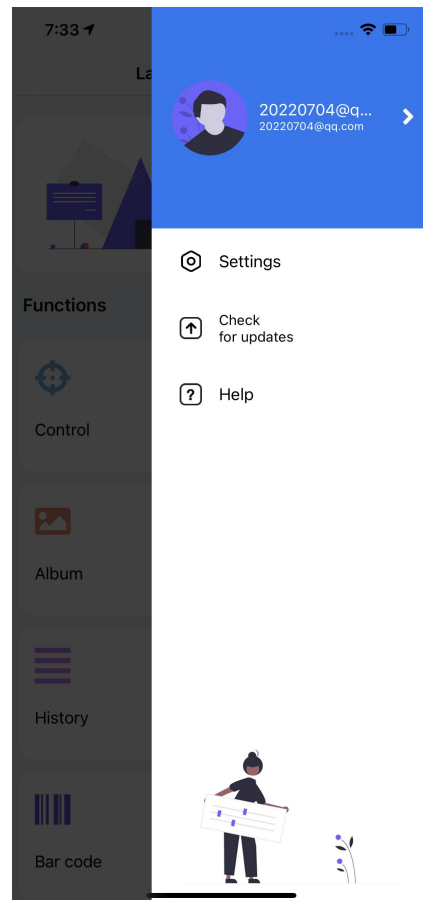


Image9.2.0.2Sidebar interface



## 9.2 Sidebar (User Box)

The top of the sidebar: account information interface (as shown in Image 9.2.1)

- ①Users log in to the app with their own account and open the sidebar page;
- ②After opening the sidebar, you can enter the user information viewing and modification interface (as shown in Image 9.2.1);
- ③After entering this page, users can view and modify their own images and their own nicknames (as shown in Image 9.2.1);
- ④You can view your own mailbox but cannot modify it, bind or unbind third-party accounts, modify passwords and cancel accounts, and finally log out of the current user through this page (Image 9.2.2, Image 9.2.3 , Image 9.2.4, Image 9.2.5).

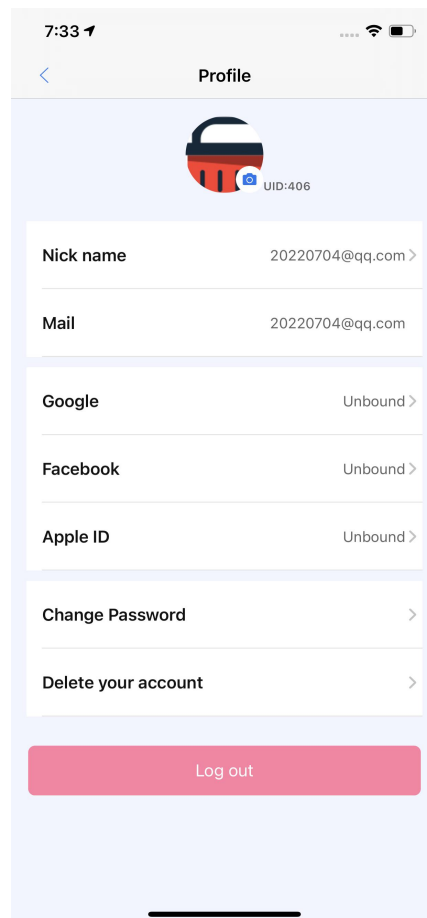


Image9.2.1 Personal information interface

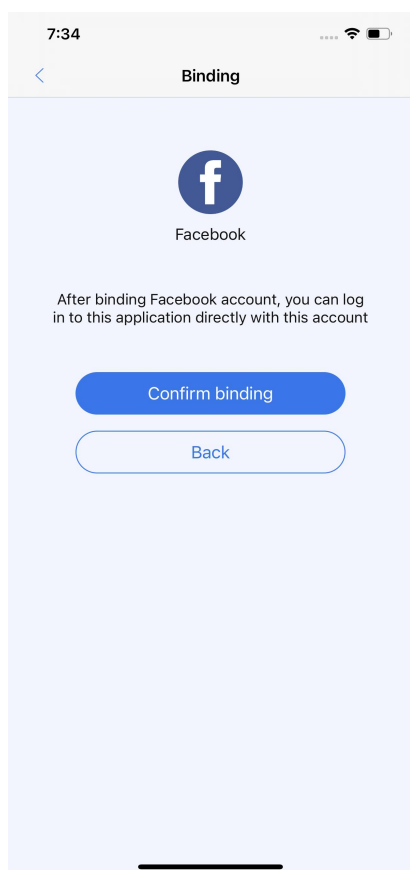


Image9.2.2 Bind a third-party account

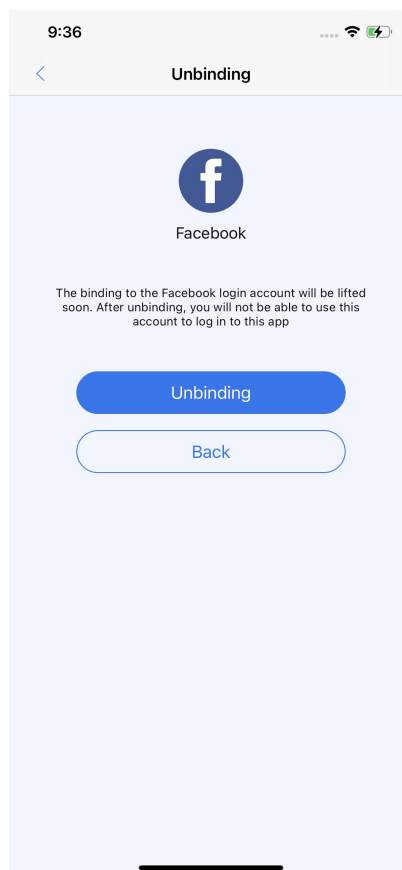


Image9.2.3 Unbind third-party accounts

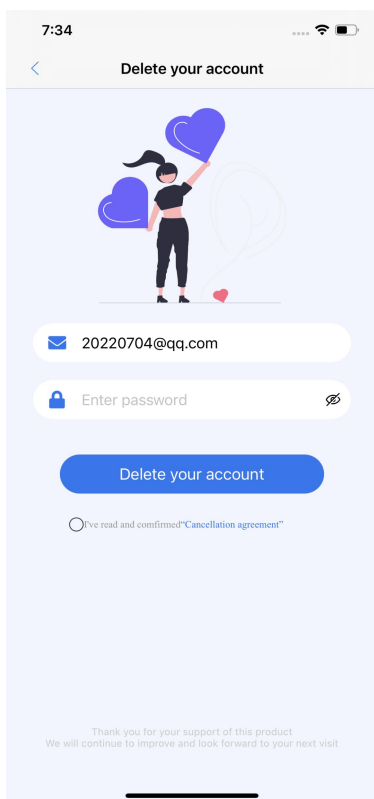


Image9.2.4 Logout

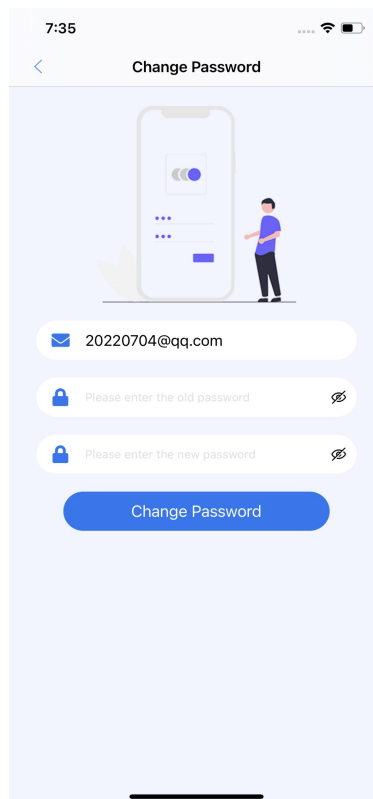


Image9.2.5 Change password interface

## 9.3 Sidebar (Configuration Box)

Sidebar configuration box: function configuration button (such as Image9.1.2 white area)

9.3.1 Settings: The settings are composed of three parts: general, guide and terminal, such as Image9.3.1;

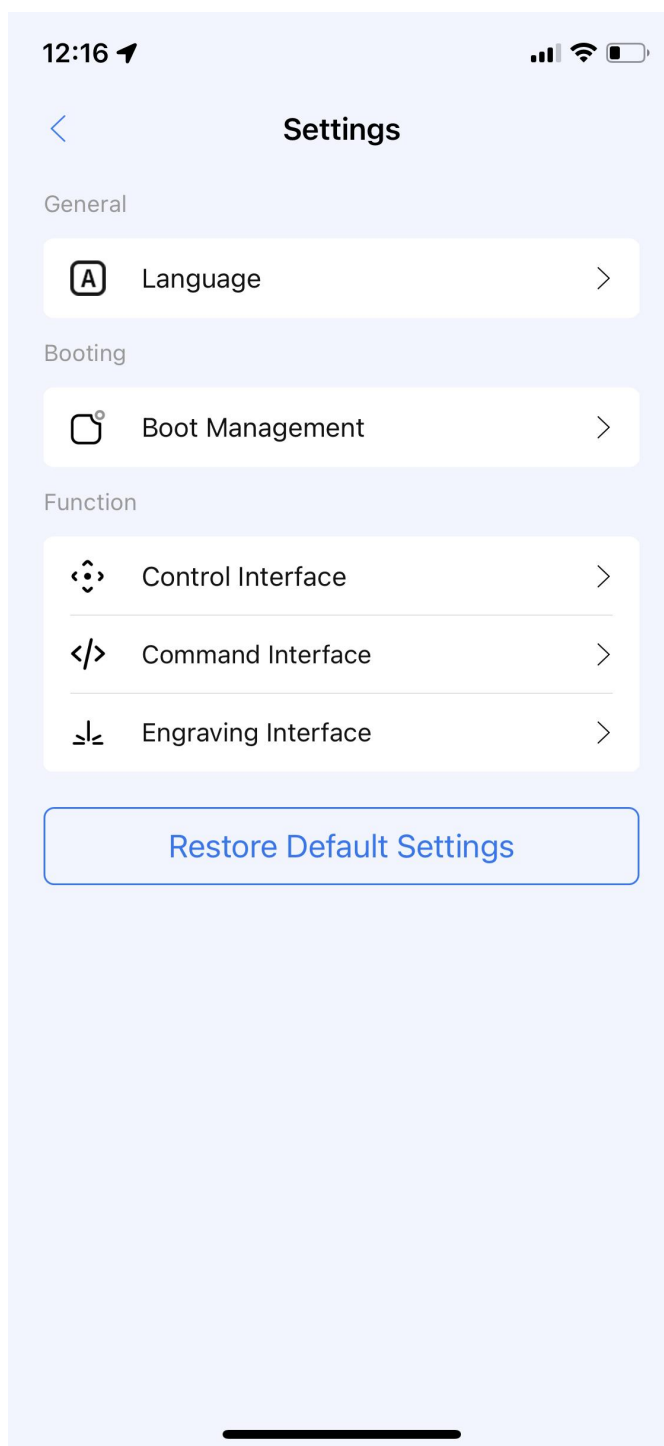


Image9.3.1set up

I General: It consists of language selection, such as Image9.3.12, Chinese, English and other languages can be selected.

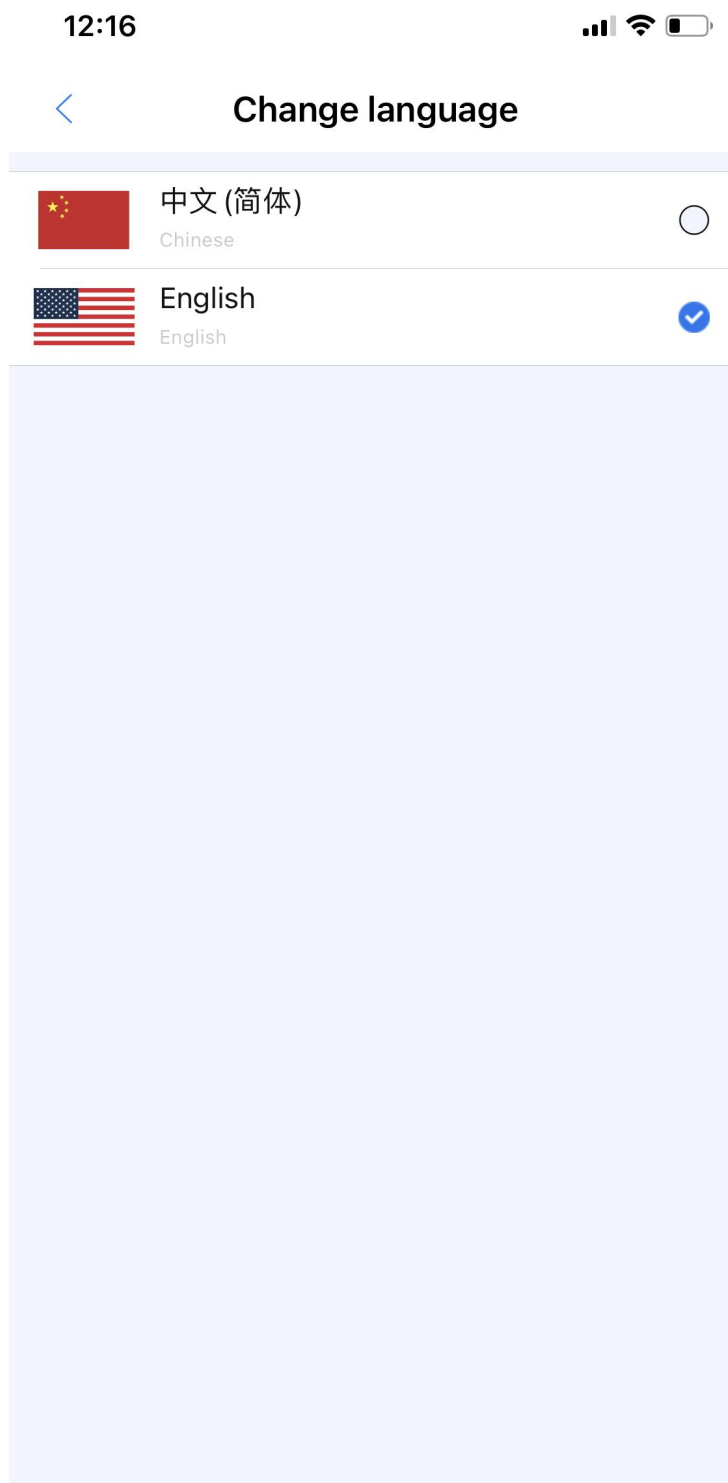


Image9.3.12 langues set up

II Guide: It consists of guide management. For example, Image9.3.13 can open three guide options: quick engraving guide, release Alarm guide, and release Hold guide.

1) Quick engraving guide: used for the first engraving guide learning.

2) Releasing the Alarm boot: It is used to release the Alarm when the device is in the Alarm state and cannot be engraved.

3) Releasing Hold Boot: It is used to release the boot when the device is in the Hold state.

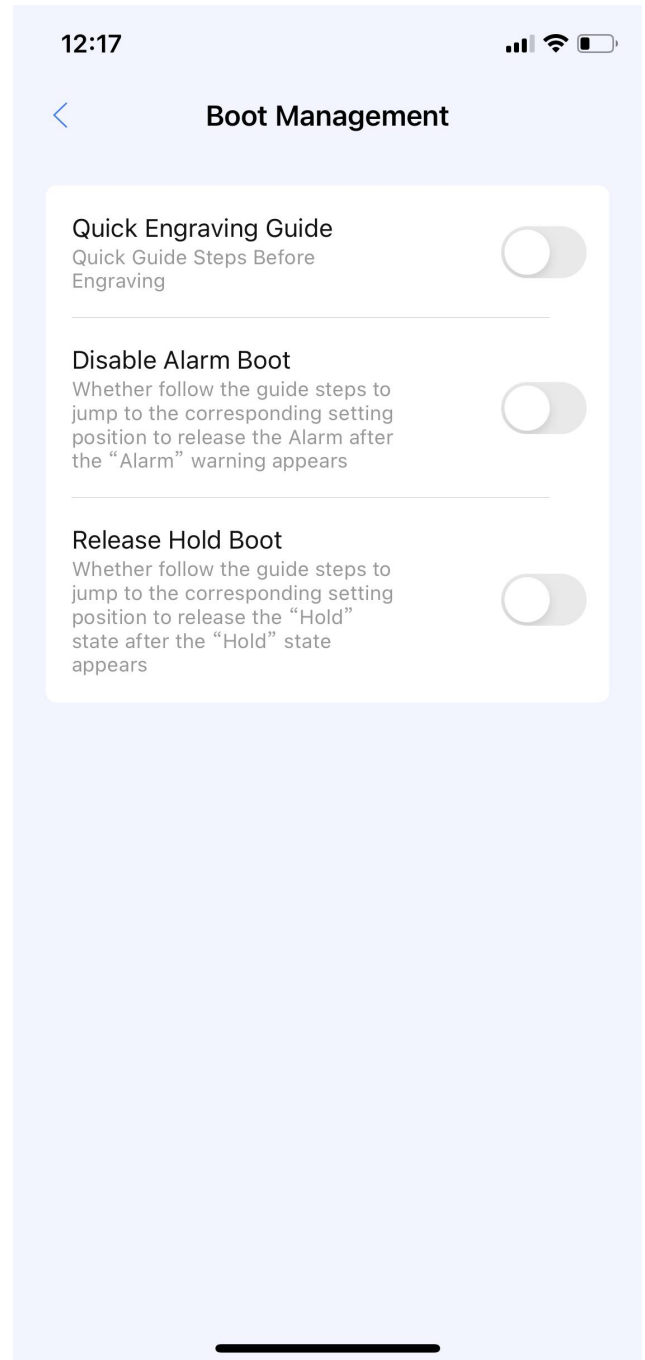


Image9.3.13Boot management

III Terminal: There are four interfaces: control interface (such as Image9.3.1.41), command interface (such as Image9.3.1.42), engraving interface (such as Image9.3.1.43), and file interface (such as Image9.3.1.44). Select the composition, which can be used for data modification and setting.

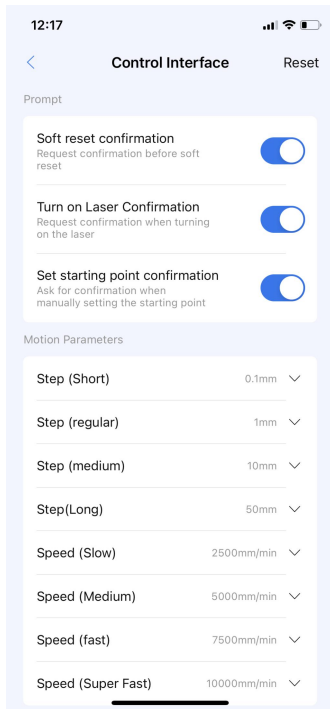


Image9.3.1.41 control interface

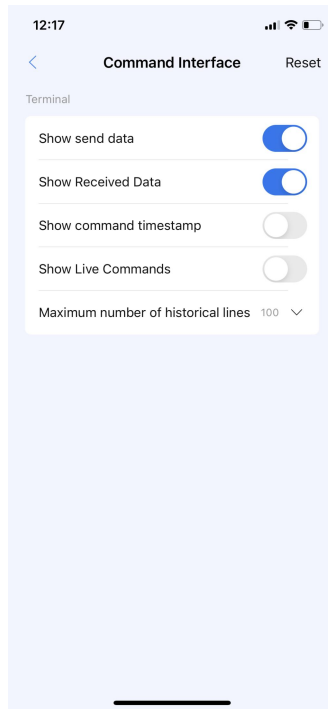


Image9.3.1.42 command interface

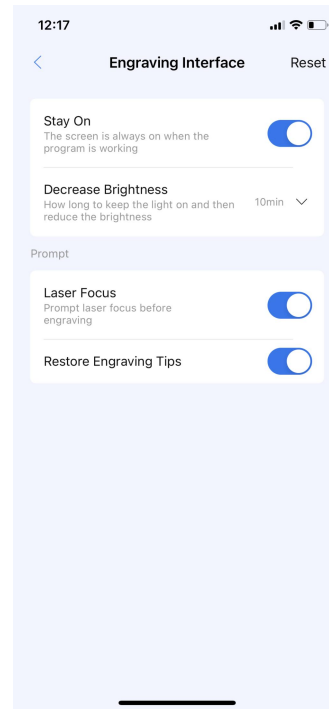


Image9.3.1.43 Sculpting interface

1) Control interface: It consists of a prompt box and a motion parameter box, as shown in Image9.3.1.41;

a) Tips:

① Soft reset confirmation: When there may be a soft reset, a confirmation request will be requested, and a prompt will be prompted when the soft reset is exceeded.

② Confirmation of turning on the laser: Request confirmation when turning on the laser manually. After turning on the laser, it will prompt you to turn on the laser manually.

③ Confirmation of starting point setting: request confirmation when manually setting the zero point, and will prompt when manually setting the zero point after it is turned on.

b) Movement parameters: used to set the setting items of step length and speed in the control page.

① Step length (short, regular, medium, slow): It consists of 0.1, 0.2, 0.5, 1, 2, 5, 10, 20, 50, 100, 200mm, and the distance requirements are: short < regular < medium < slow.

② Speed (slow, medium, fast, super fast): from 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000, 2500, 4000, 5500, 7000, 8500, 10000, 11500, 13000, 14500, 16000, 17500, 19000, 20000mm/min, among which the speed requirements are: slow<medium<fast<ultra-fast.

2) Command interface: composed of motion parameter boxes, as shown in Image9.3.1.42;

a) Movement parameters:

① Display sent data, display received data, display command timestamp, display real-time command: After opening, when entering the command interface, it will be enabled by default.

② Maximum number of historical lines: It consists of 100, 500, 1000, and 2000. After selecting the desired number of lines, the command interface will display the maximum number of command lines that can be recorded.

3) Engraving interface: It consists of regular frame and guide frame, as shown in Image9.3.1.43;

a) General:

① Keep always on: After enabling the setting, the screen will no longer be closed during engraving (which is beneficial to prevent the interruption of engraving due to the cleaning of

the background after the screen is closed during online engraving).

② Reduce brightness: It consists of 1, 5, 10, 30, 60min and never, respectively. After selecting the corresponding time, the device will reduce the screen brightness after keeping it on for a corresponding time (To ensure the power consumption of the screen when the screen is always on for a long time). ).

b) Guide:

① Laser focus: When you start engraving after it is turned on, it will prompt the laser focus.

② Resume engraving prompt: After the device is disconnected or the engraving is interrupted, when the connection is restored, a prompt of engraving recovery will be prompted;

9.3.2 Upgrade: When the device is in a lower version, it is used for firmware upgrade.

9.3.3 Help document: used to help learn the use of the APP.