



BSL Sapphire

User Manual

< APP Version >

ChangSha BSL Info. Tech. Co.,Ltd



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1 Overview

1.1 Software Introduction

This version is still under revision and improvement. Please use it as a temporary version. This software has the following main functions:

- Support fiber laser, CO2 laser, UV laser, etc.;
- Support red light and blue light engraving;
- Support common one-dimensional barcode and two-dimensional code;
- Support common format vector graphics and bitmap graphics engraving, support vector graphics and graphic filling;
- Support plane marking, roller marking, and clamp marking;
- Support Windows system and Mac system;
- Provide picture PS function to optimize the design of different picture styles;
- Support online gallery;
- Support 3D relief;
- Provide powerful editing functions: support text arrangement by arc, arbitrary graphic drawing/editing, breaking up/combining, grouping/dissolving, canceling/restoring, shaping, etc.;
- User-friendly interface: The interface of the tool should be concise and clear, the operation should be simple and intuitive, and the user can quickly get started with various functions.
- Freely design the graphics to be processed.

1.2 Description of This Manual

- If there is any discrepancy between the actual operation mode, function settings, etc. caused by software upgrade and this manual, the software shall prevail.
- Other product and company names mentioned in this article may be trademarks of their respective owners.

1.3 Software Installation Instructions

1) Android: Download the file below and unzip it, then send the unzipped Sapphire installation package to your phone and install the Sapphire software on your phone.



2) iOS: Search for "Sapphire" in the App Store, download and install the Sapphire software.



1.4 Software Upgrade Instructions

- 1) When the software needs to be upgraded, a prompt will appear on the software interface;
- 2) For iOS and Android, click "Upgrade" to go to the App Store to upgrade.

2 Quick Start

2.1 Home

Open Sapphire on your phone desktop and enter the home page, which displays new files and historical files. As shown in Fig. 2-1.

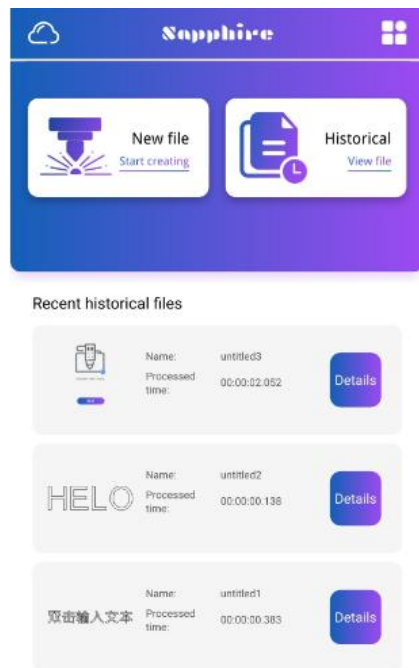


Fig. 2-1 Home

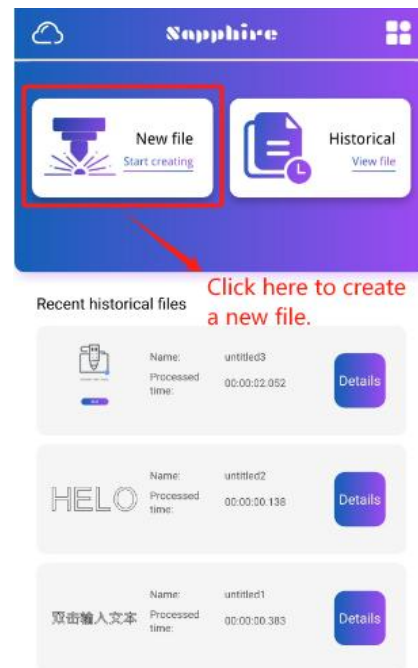


Fig. 2-2 New File

2.2 Create New File

Click the "Create a new file" button on the homepage to enter the operation interface. As shown in Fig. 2-2.

2.3 Draw Edit Text

2.3.1 Set edit text

1) Click the text icon in the toolbar below the operation interface to display the text in the middle of the canvas. As shown in Fig. 2-3;

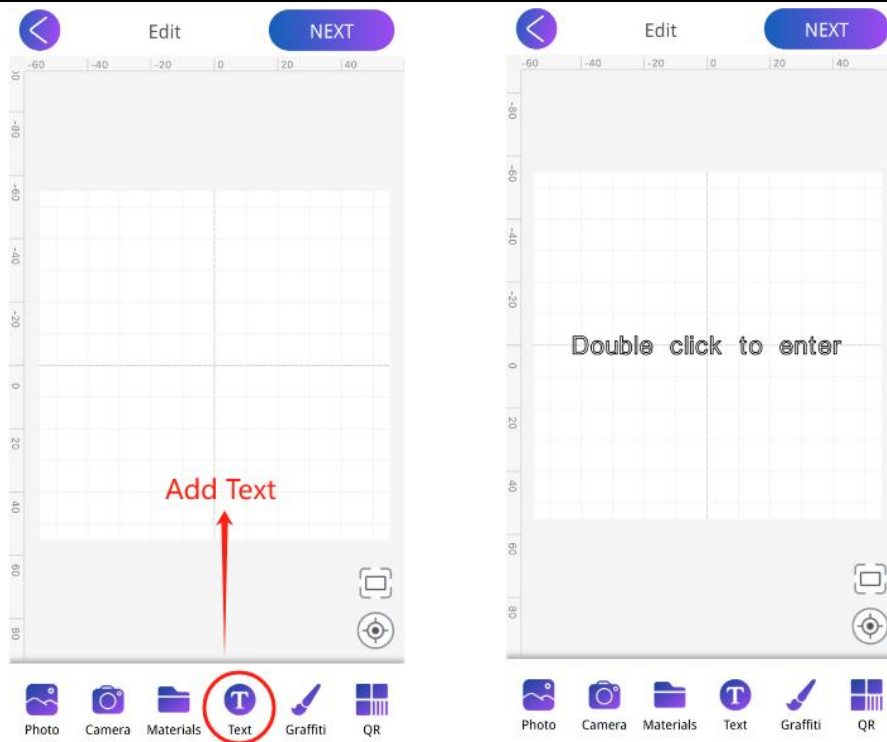


Fig. 2-3

2) Double-click the text, enter the text, click "Confirm", and return to the canvas. Shown in Fig. 2-4.

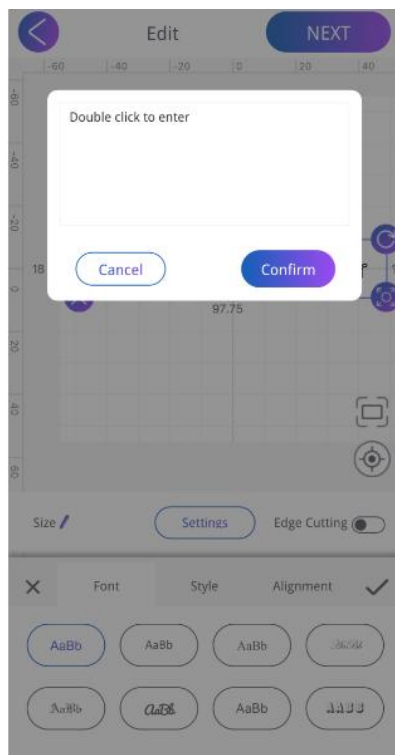


Fig. 2-4



Fig. 2-5

3) Below the canvas, you can select the font, adjust the style, and select the alignment. Shown in Fig. 2-5.

2.3.2 Process Settings

Select the material type, select the laser light source type (blue light or red light), determine the number of processing cycles, adjust the output power and movement speed parameters, and then click "Confirm". Shown in Fig. 2-6.

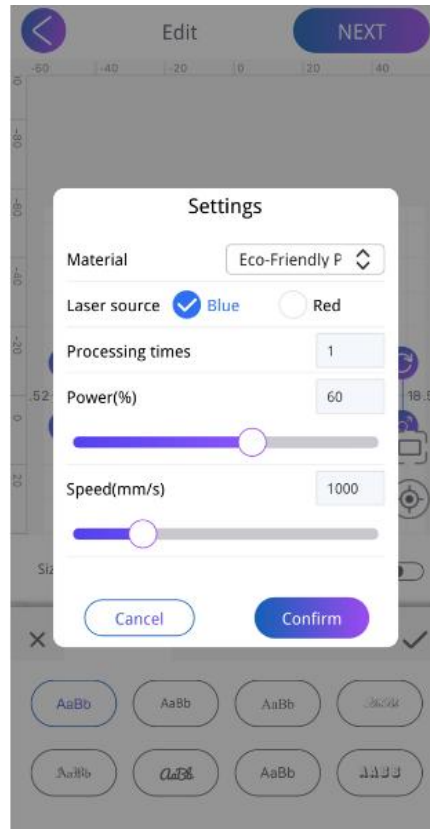


Fig. 2-6 Process Settings

2.4 Connecting Devices

Click "Next" to connect the device. The phone will search for the board's wifi. After the connection is normal, open the software and wait for about 3 seconds. When the device is successfully connected, click "OK". Shown in Fig. 2-7.

(Note: Before connecting the phone to the board's wifi, you need to turn off the mobile data network first, otherwise the software may not be able to connect to the board.)

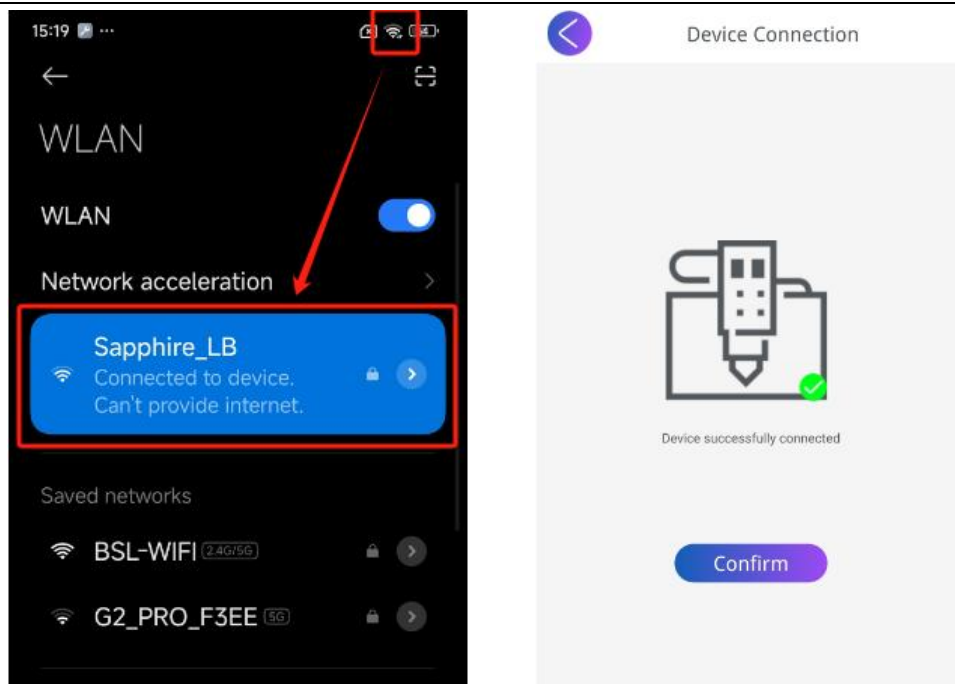


Fig. 2-7 Connecting Devices

3 Software Description

3.1 Initial Interface

Click on the mobile desktop to enter the software. Shown in Fig. 3-1.



Fig. 3-1 Initial Interface

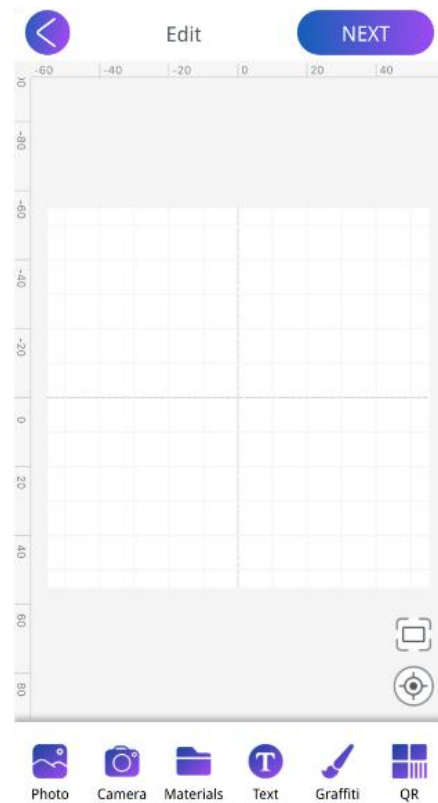


Fig. 3-2 Create new file

Create a new file: Create a blank template file, enter the editing interface, and start creating. Shown in Fig. 3-2.

History File: Select a previously processed project in the history file, or delete a previously processed project; after opening the project, view the file details and directly process it again. Shown in Fig. 3-3.

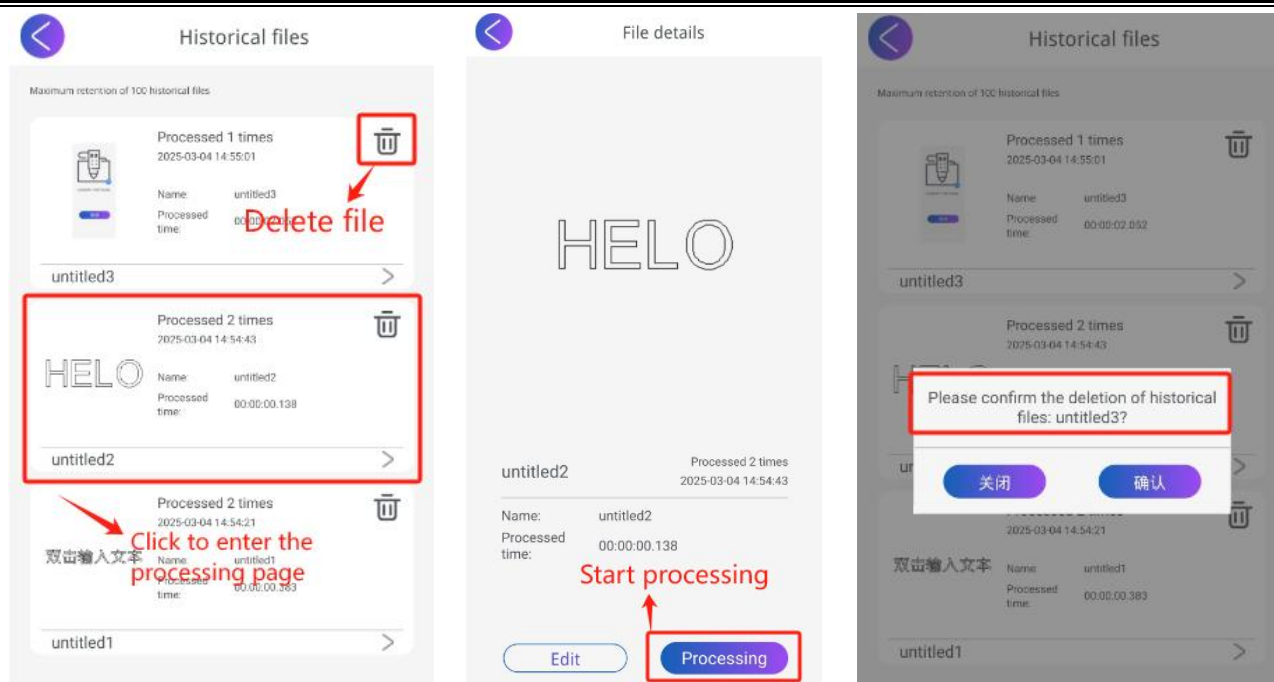


Fig. 3-3 History File

3.2 Toolbar (Drawing Menu)

Located at the bottom of the main interface, its main function is to provide users with patterns to quickly design when making graphics, such as text, graffiti, etc., and tools for opening and marking pictures, taking photos and selecting materials; Shown in Fig. 3-4.

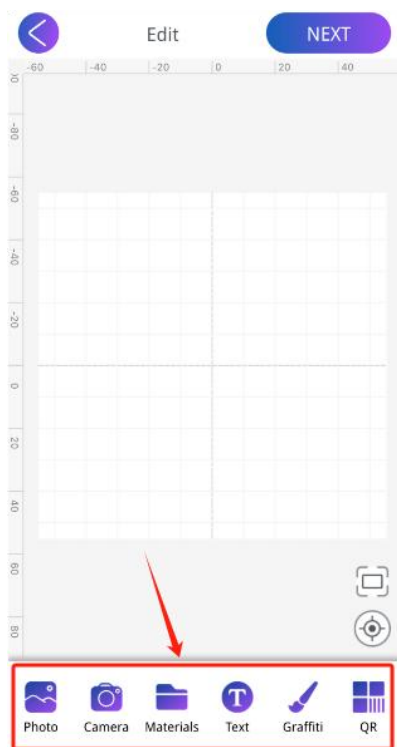


Fig. 3-4 Toolbar

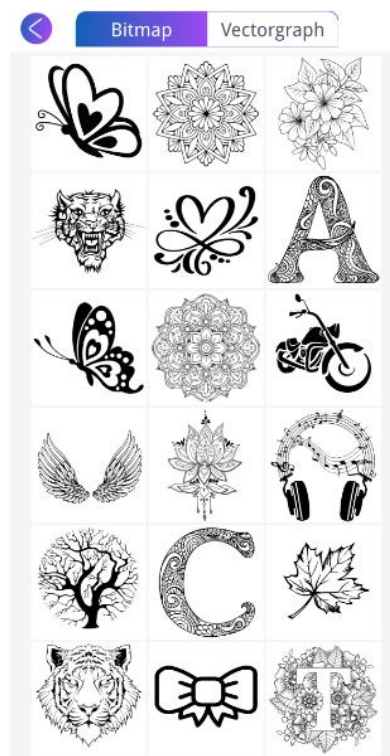


Fig. 3-5 Material

Photo: Click on the photo to access the mobile phone album. You can open the pictures saved in the mobile phone. Click to select the photo you like, crop it, and import it into the canvas area.

Camera: Click on the camera to take the photo you like. After confirmation, crop it and the picture will be imported into the canvas area.

Material: The software comes with a material library, including bitmaps and vectors. Click to select the material you like and import it into the canvas area. Shown in Fig. 3-5.

Bitmap: supports JPG, PNG, JPEG and other common formats of images;

Vector: supports DXF and AI formats of vector;

Text: draw a text and double-click to modify the text. Shown in Fig. 3-6.

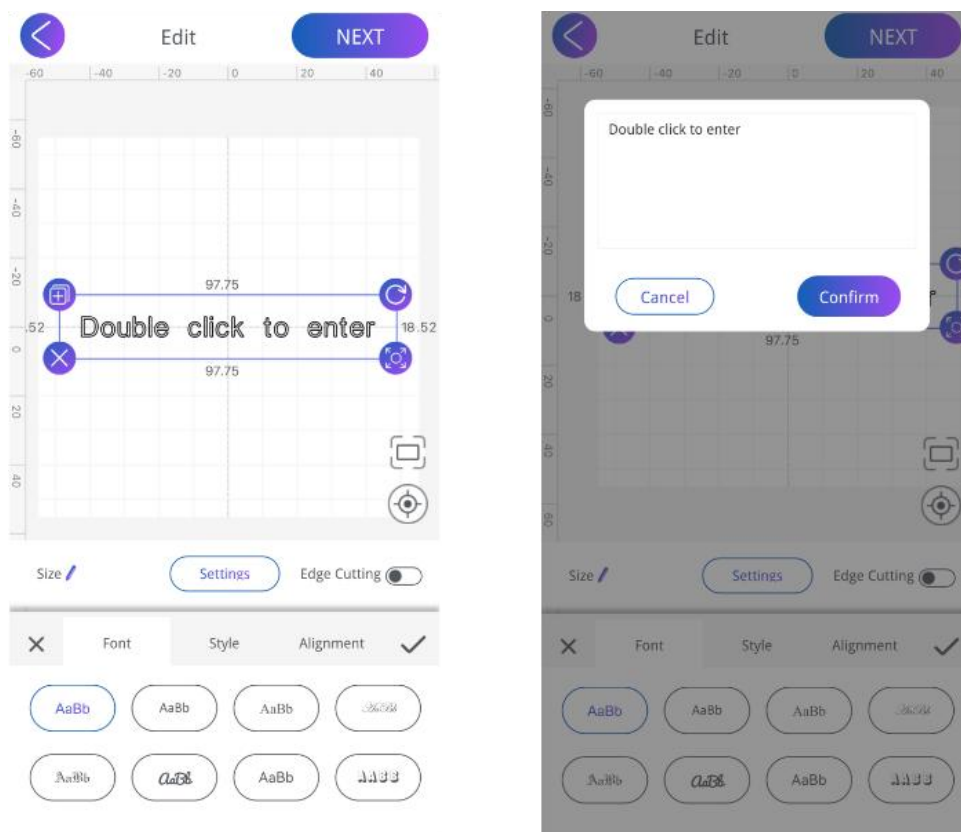


Fig. 3-6 Text

Graffiti: Draw whatever graphics or text you want in an abstract style. Shown in Fig. 3-7.



Fig. 3-7 Grafitti

QR code: You can generate QR code and barcode, click to edit or modify the content of QR code and barcode. Shown in Fig. 3-8.

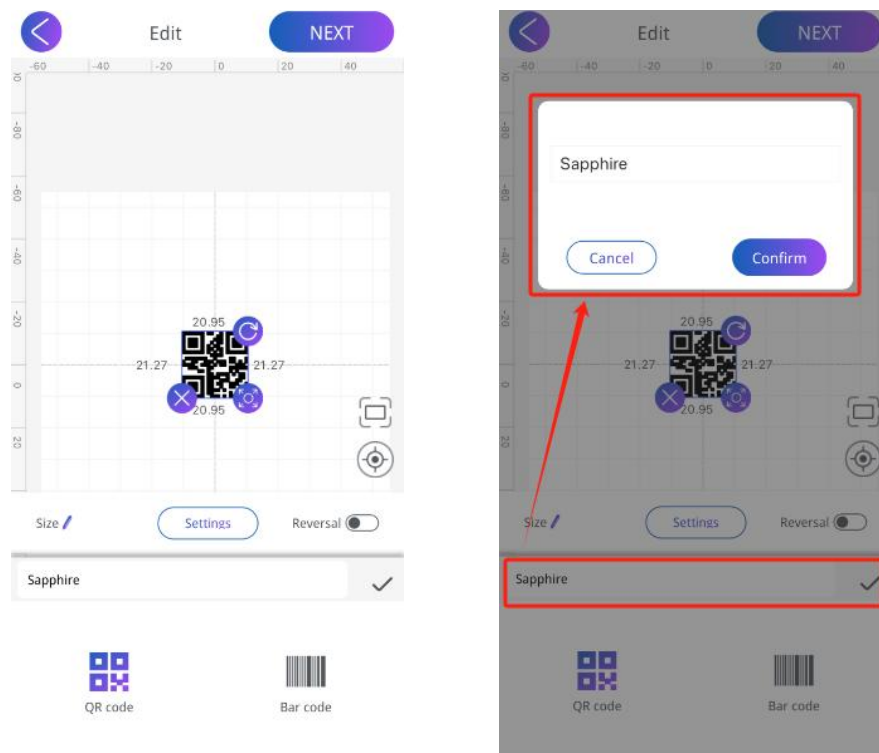


Fig. 3-8 QR Code

3.3 Editing the Action Bar

3.3.1 Common operations on the main interface

Located in the middle of the main interface and on the graphic element, its main function is to facilitate users to edit the size, invert, trim, delete, rotate, etc. of the graphic element when making graphics. Shown in Fig. 3-9.

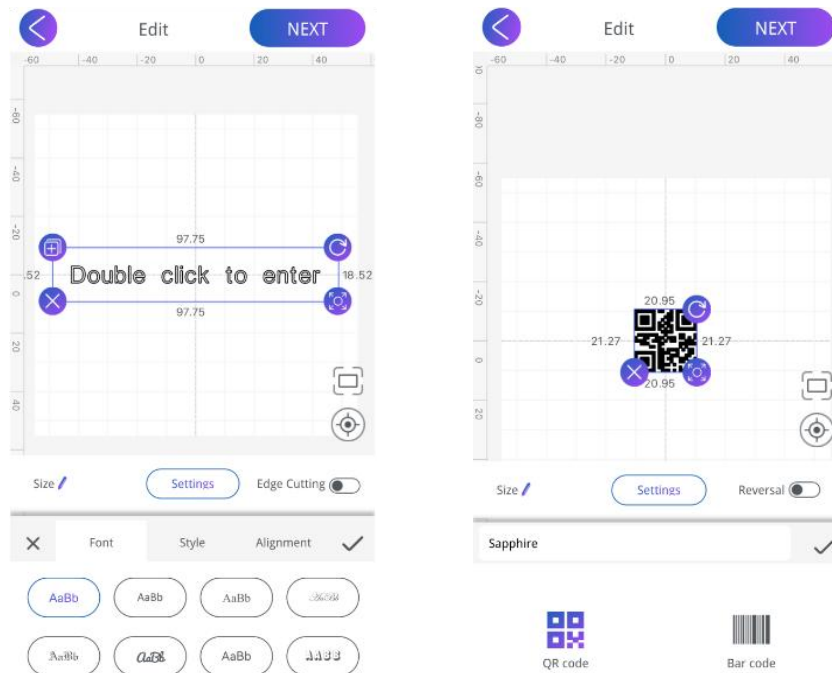


Fig. 3-9 Left: Text & Right: Picture

Copy: Copy the text directly through the control and copy the text in the center of the canvas. Shown in Fig. 3-10.

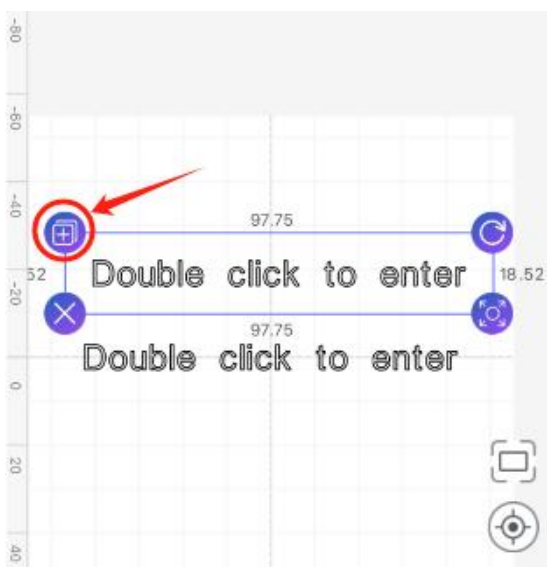


Fig. 3-10 Copy

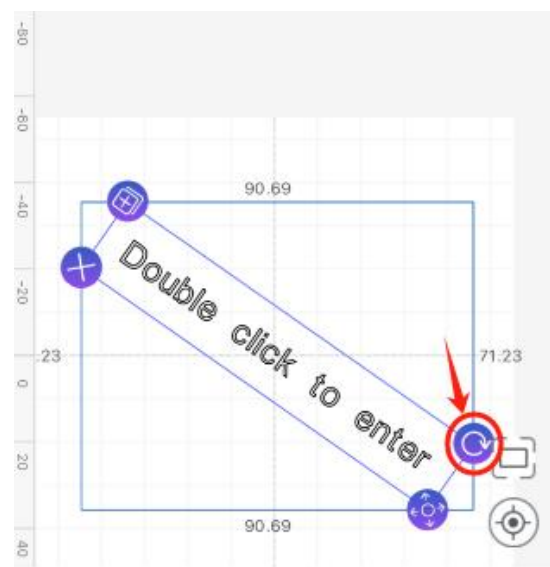


Fig. 3-11 Rotate

Rotate: Directly rotate the element through the control, and the selected element can be rotated 0~359 degrees. Shown in Fig. 3-11.

Delete: Click icon  and a window will pop up asking whether to delete the element. Click "OK" to delete the element. Click "Cancel" to keep the element. Shown in Fig. 3-12.

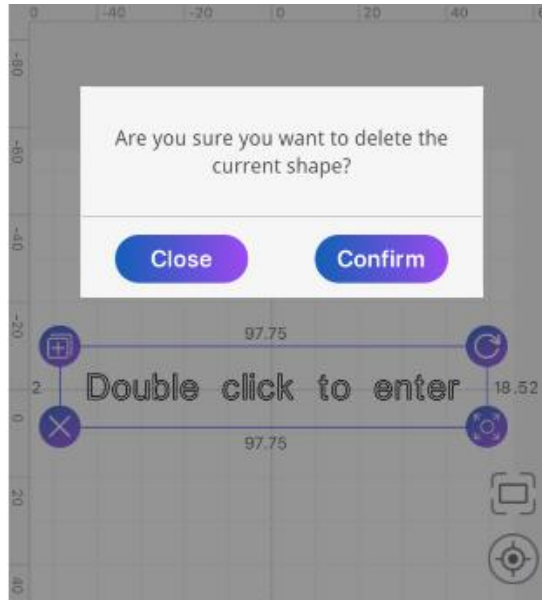


Fig. 3-12 Delete

Size: To change the size of an element, you can enter it in the text box or directly scale the element using the control. Shown in Fig. 3-13.

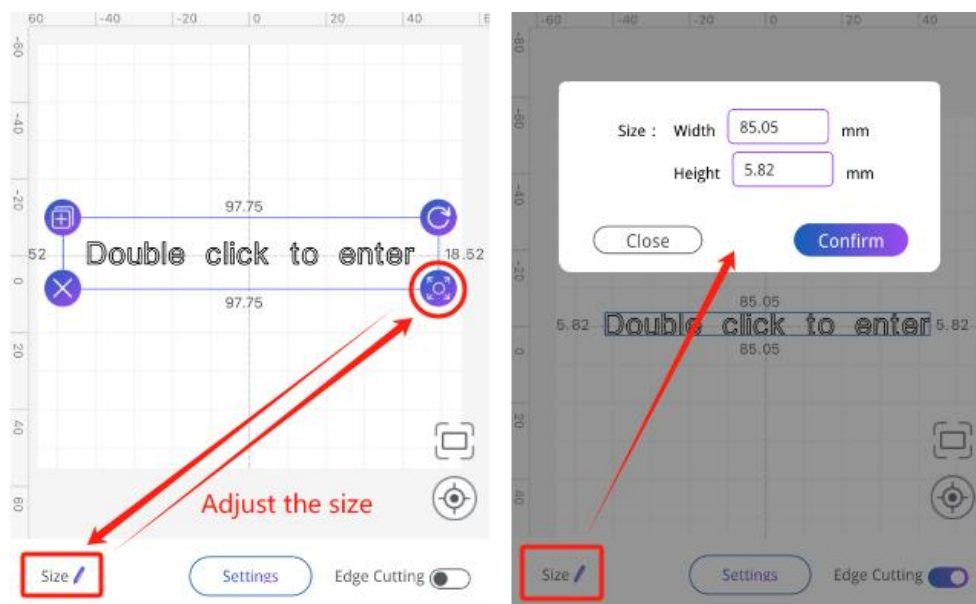


Fig. 3-13 Size

Center: Click  and the element will be automatically placed at the center of the canvas. Shown in Fig. 3-14.

Center the canvas: Click , and the canvas will be automatically centered. Shown in Fig. 3-14.

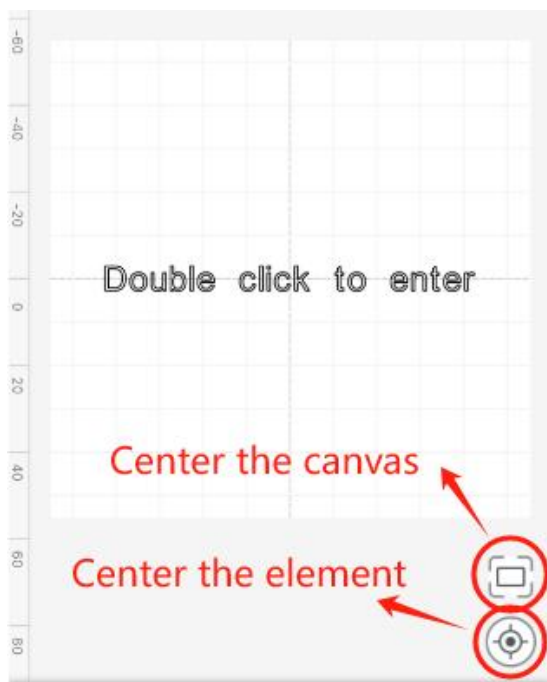


Fig. 3-14 Center



Fig. 3-15 Trim

Trim: Turn on the switch to trim the text without retaining the text margins. The trimmed text cannot be copied, deleted, or selected, but the text size can be manually entered. Shown in Fig. 3-15.

Invert: Invert the color hue of the element. Shown in Fig. 3-16.

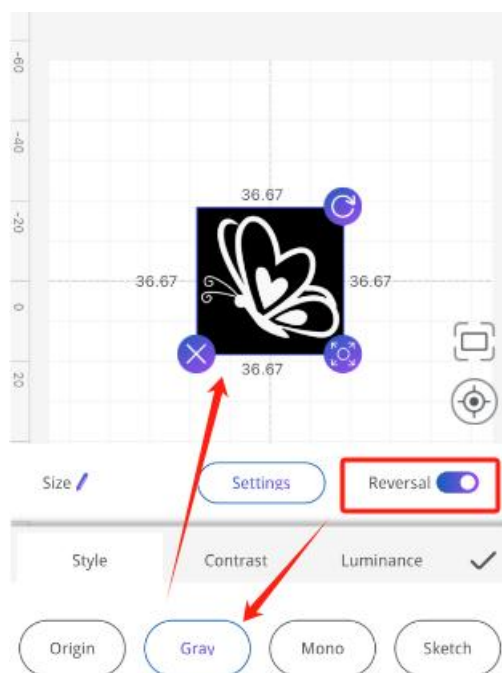


Fig. 3-16 Invert

3.3.2 Graffiti Operation Bar

Click on Graffiti to enter a new page. Its main function is to draw the required graphics at will. Graffiti drawing includes brush, eraser, undo, restore, and adjusting the size of brush and eraser. Click Confirm after drawing. Shown in Fig. 3-17.



Fig. 3-17 Graffiti Operation Bar

Undo: When the user makes an error operation or deletes by mistake, this button can be used to return to the previous operation.

Restore: Contrary to Undo, when too many undo operations are performed, this button can be used to restore to the previous operation.

Brush: You can draw the desired graphics according to the thickness of the brush. The thickness of the brush can be adjusted: 1~60.

Eraser: You can use the eraser tool to delete certain parts of the image. You can adjust the size of the eraser to erase locally. The eraser size is: 1~60.

Clear: Directly delete the graphics drawn on the canvas.

Confirm: Click the icon  to confirm that the drawn image is completed.

3.4 Property setting area

The property setting area is at the bottom of the canvas. Click on an element to pop up a window. Set the properties of the element. Different elements have different properties.

3.4.1 Text

You can modify the basic properties of the text, edit the text content, set the font, style, alignment, etc. Shown in Fig. 3-18.

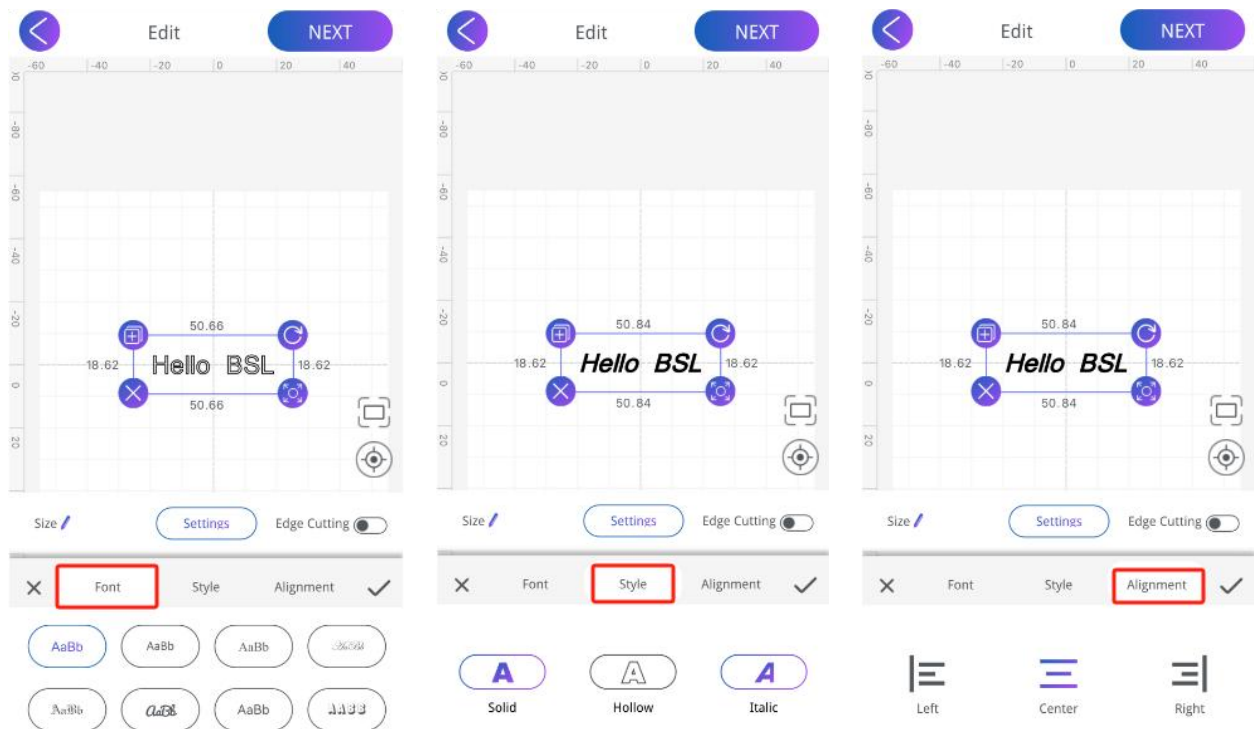


Fig. 3-18 Text Edit

Font selection: font style of the font library.

Style: text style, including solid, hollow, and italic.

Alignment: text alignment, mostly used when text wraps, including left alignment, center alignment, and right alignment.

Text content: double-click the text to modify the text content.

Confirm: confirm the basic properties of the edited text.

Cancel: cancel the basic properties of the edited text.

3.4.2 Bitmap

You can set the properties of the image, including image cropping, style, contrast, brightness, magic wand, eraser and other functions. Shown in Fig. 3-19.



Fig. 3-19 Bitmap

Image cropping: After importing or taking a photo, when uploading the image to the canvas, crop the image first. It includes free cropping, proportional cropping, rectangular cropping, and circular cropping. Shown in Fig. 3-20.

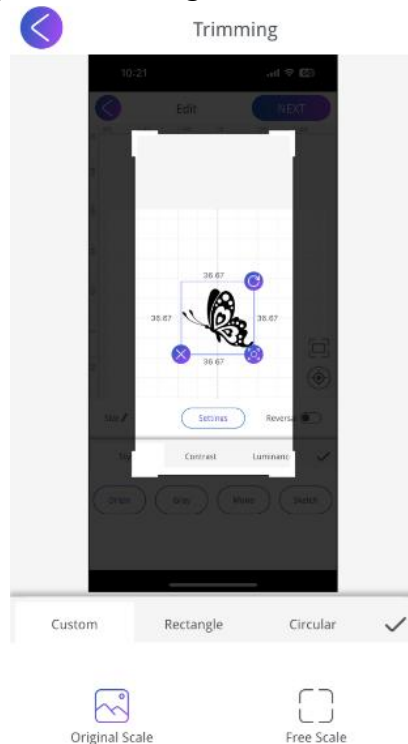


Fig. 3-20 Image cropping

Original cropping: The system default cropping size, which is adjusted in proportion;

Free cropping: Drag the cropping frame freely to crop;

Rectangular cropping: There are multiple rectangular cropping methods of various proportions for selection; Shown in Fig. 3-21.

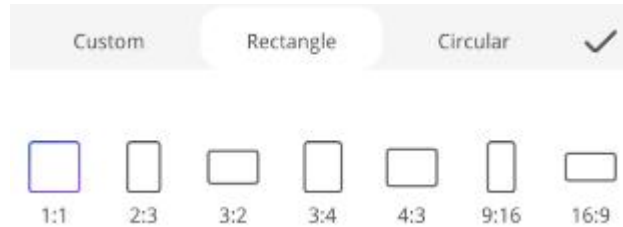


Fig. 3-21 Rectangular cropping

Circular cropping: Crop in a circular shape. You can slide the slider to adjust the size of the circle. The adjustment range is 0-100. Shown in Fig. 3-22.



Fig. 3-22 Circular cropping

Style: is an image processing tool that allows users to change the look and feel of an image by applying a variety of effects. Includes: Original, Grayscale, Sketch, Black and White.

Contrast: refers to the degree of contrast between the light and dark parts of the image. You can adjust the value by sliding the slider.

Brightness: refers to the overall brightness and darkness of the image. You can adjust the value by sliding the slider.

3.5 Process Settings

Click the element on the canvas, then click the "Process Settings" button below the canvas to pop up the process parameter setting window. You can customize the parameters of each marking type, such as process material, light source, number of processing times, power, speed, etc. Shown in Fig. 3-23.

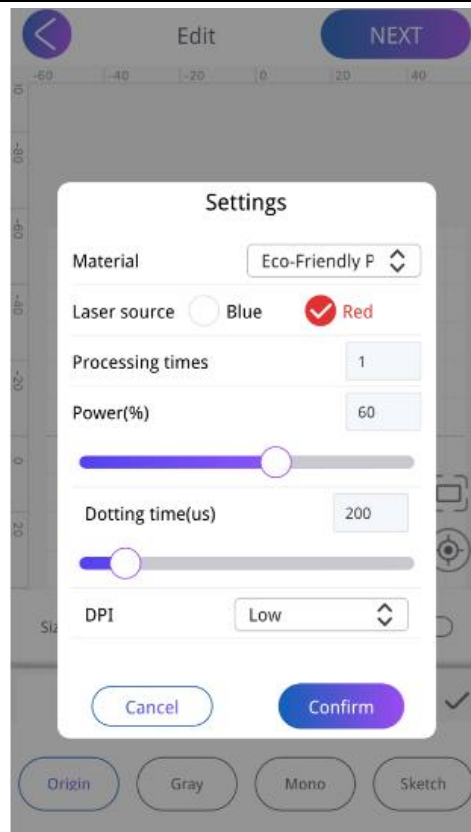


Fig. 3-23 Process Settings

Process material: Select different materials, the power and speed will be different, you can create a new defined material according to the power and speed.

Laser light source: Supports two light sources for processing, namely: blue light (10W) and infrared light (2W), you can choose different light sources according to the material.

Number of processing times: The default is 1, and the maximum support is 100 direct repeated processing times. The more processing times, the deeper the marking marks. Usually after setting the parameters, you can get a better marking effect at one time.

Power: The setting range is 1-100, and the value mainly affects the depth of the processing effect.

Dotting time: Set 1-2000, the dotting time mainly affects the depth of the image dotting time.

DPI: The concept of DPI is the number of pixels per inch, and 1 inch is equal to 25.4 mm. When the DPI value is higher, the image prints clearer and the processing time is longer. Otherwise, the more blurred, the shorter the processing time.

3.6 Marking Setting

- 1) Click "Next" in the upper right corner of the edit page; Shown in Fig. 3-24;



Fig. 3-24 Click "Next"

- 2) Connect the board;
- 3) Select the required marking mode.

4) **Connect the device:** Click "Next", connect the device, search the board wifi on the phone, after normal connection, open the software, wait for about 3 seconds, and the device connection is successful, click "OK". (Note: Before connecting the phone to the board wifi, you need to turn off the mobile data network first, otherwise the software may not be able to connect to the board.) Shown in Fig. 3-25;

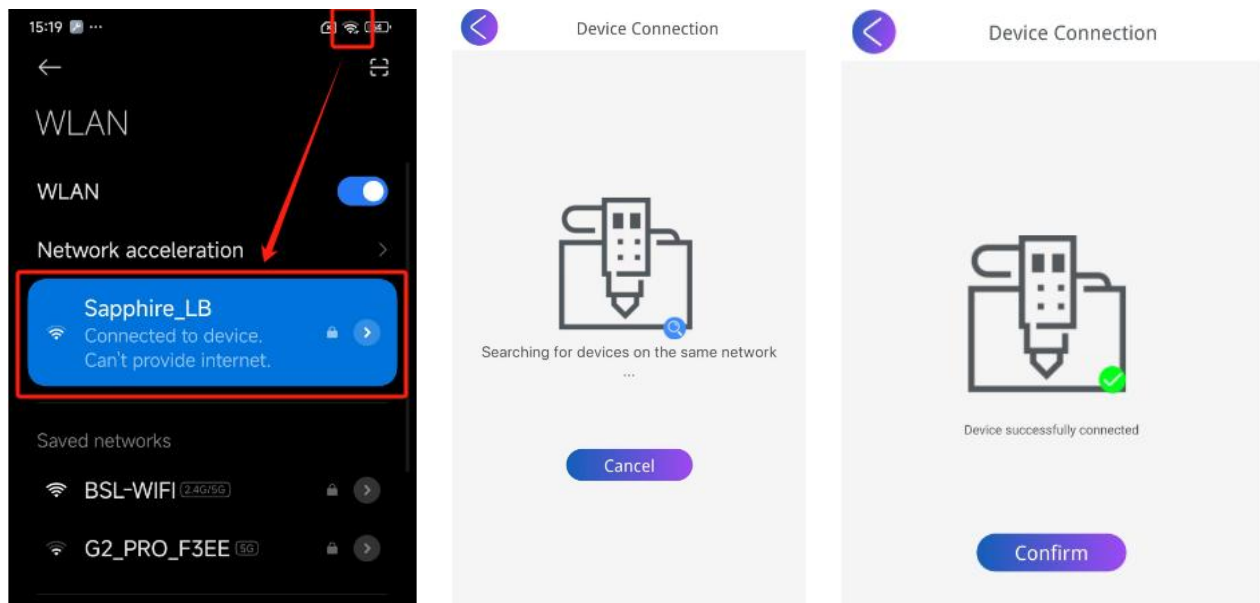


Fig. 3-25 Connect the device

Focus: Support auto-focus and adjusts the focal length of the galvo. Shown in Fig. 3-26.

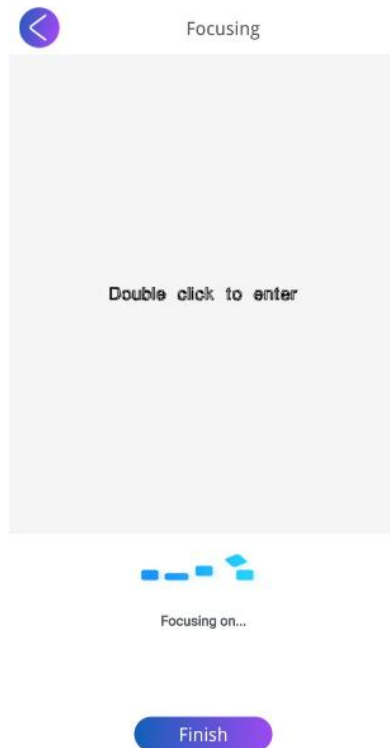


Fig. 3-26 Focus

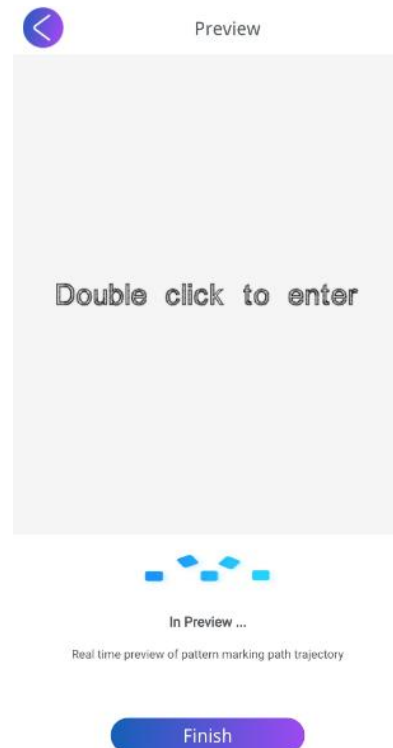


Fig. 3-27 Preview

Preview: Preview the marking range and size of graphics and text. Shown in Fig. 3-27.

Processing: Click "Processing" to confirm whether the current area is safe. During the marking process, you can pause or cancel the processing. After the marking is completed, the processing is displayed as completed, or you can return to the home page directly. Shown in Fig. 3-28.

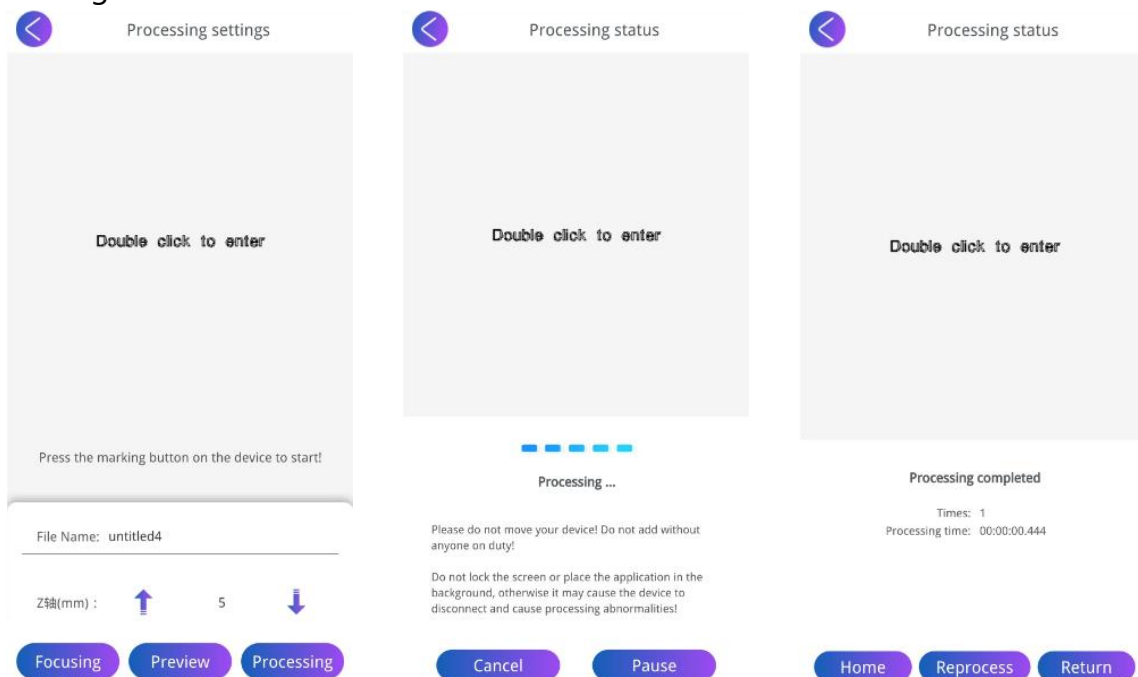


Fig. 3-28 Processing

4 Menu Bar

Located in the upper right corner of the homepage, it contains beginner guide, user agreement, language selection, device information, advanced parameters, system settings, and device connection. Shown in Fig. 4-1.

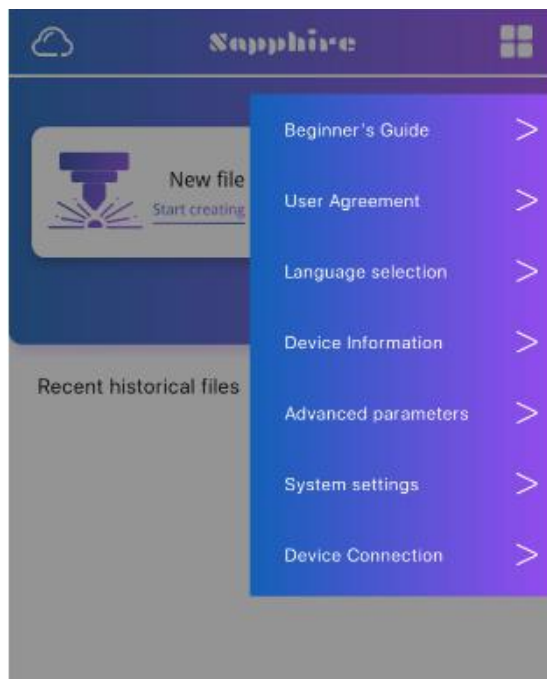


Fig. 4-1 Menu Bar

Newbie guide: to guide users to adapt to the product faster. Shown in Fig. 4-2.



Fig. 4-2 Newbie guide

User Agreement: The legal contractual relationship established between the two parties when the user accepts the specific services provided by the website operator.

Language selection: Select the language as needed, multiple languages are supported. Shown in Fig. 4-3.

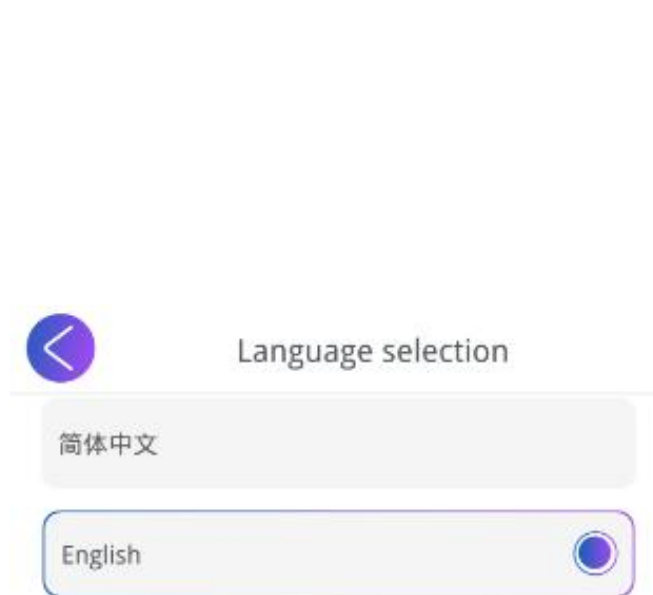


Fig. 4-3 Language selection

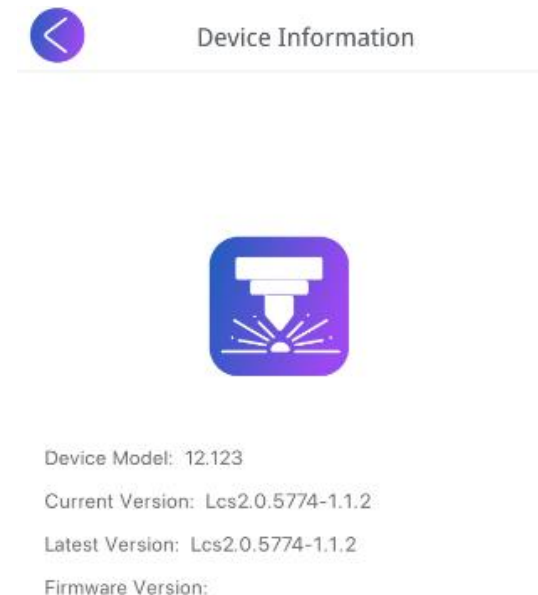


Fig. 4-4 Device information

Device information: device model, current version, latest version. Shown in Fig. 4-4.

Advanced parameters: An advanced menu for device manufacturers. Need to connect to the device before setting the parameters. Device will pop up a window when connected. Advanced parameters include laser source settings, accessory settings, etc. Shown in Fig. 4-5.

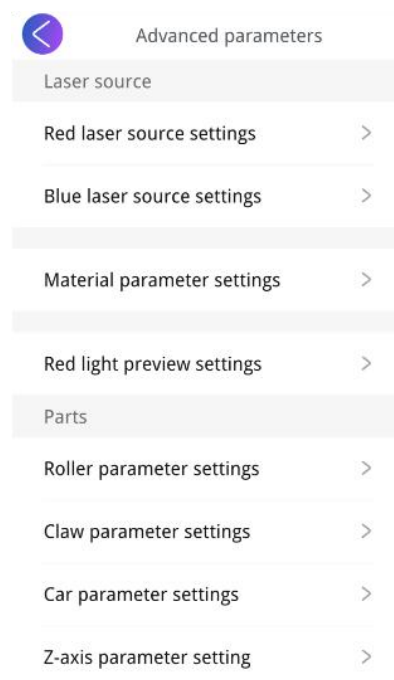


Fig. 4-5 Advanced parameters

System settings: Set processing mode and red light preview mode. Shown in Fig. 4-6.

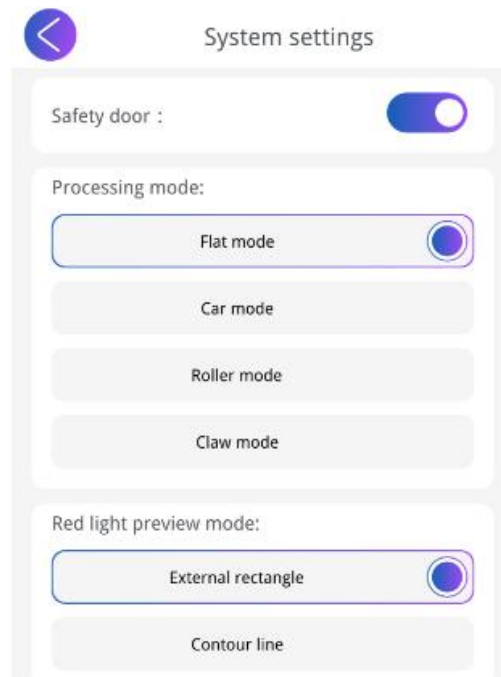


Fig. 4-6 System settings

There are 4 processing modes, namely **plane mode**, **trolley mode**, **roller mode** and **claw mode**. After selecting the mode, different mode interfaces are different.

The plane mode is shown in the figure below Fig. 4-7.

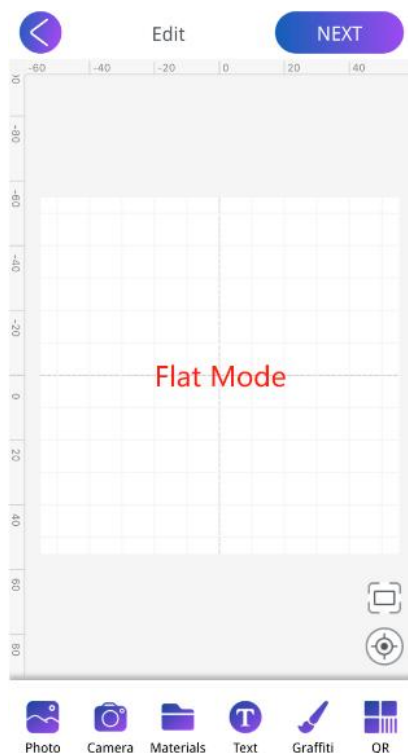


Fig. 4-7 Flat Mode

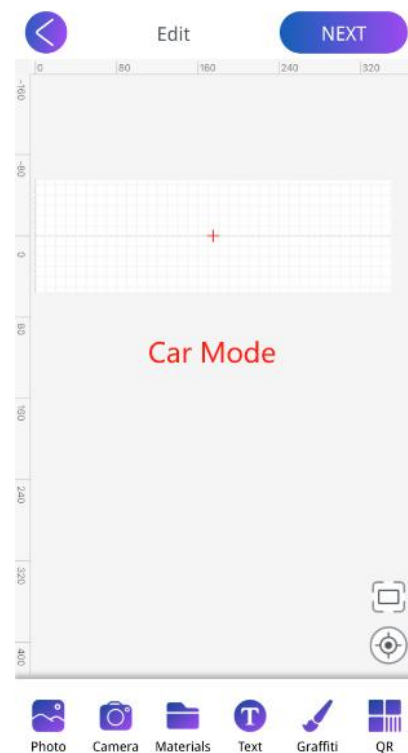


Fig. 4-8 Car Mdde

The car mode is shown in the figure above Fig. 4-8:

The roller mode is shown below Fig. 4-9:



Fig. 4-7 Roller Mode



Fig. 4-8 Claw Mode

The claw mode is shown in the figure above Fig. 4-10:

Device connection: If the device is not connected, a prompt box will pop up. Please connect the device to WiFi first and click Confirm. Shown in Fig. 4-11.

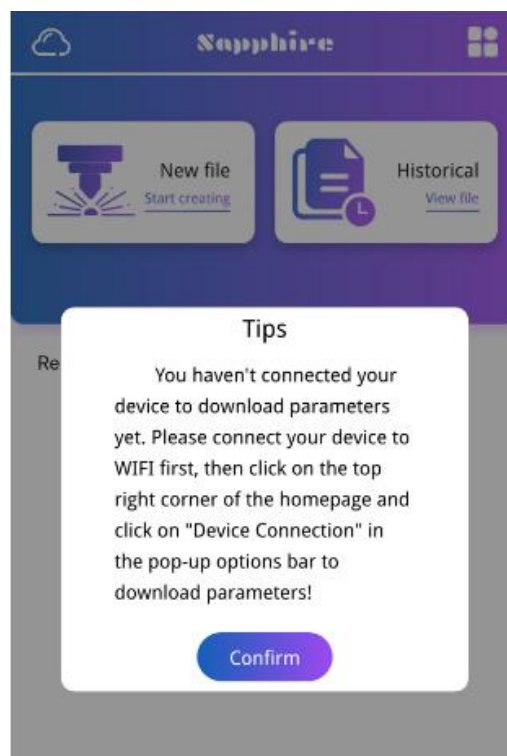


Fig. 4-11 Device connection