SEUIC OCR recognition PDA application

User manual

directory

1. Introduction

1.1. Application Overview:

OCR tool is a character recognition tool software based on image recognition technology running and used on SEUIC Android platform PDA device. The software applies 3 built-in basic recognition templates, namely: number template, number + capital letter template, number + **letter + symbol**, different **number** templates are used to recognize different character images, the built-in character template can only be used for the basic demonstration of OCR recognition technology. If the user has a special application scenario and needs to identify other characters, logos, weights, steel seals, dot matrix fonts and other information, you can identify different scene situations by customizing the template, customize the scene template, please contact 4006770876.

Features supported by this app:

- Complete the recognition of corresponding characters, numbers, characters, symbols, signs, etc. through the algorithm template.
- Through this tool, OCR recognition data can be provided for third-party application software in the form of focus input, broadcast, analog buttons, clipboards, etc.
- Support OCR sample data collection and upload the collected sample photo data to the SEUIC training platform and train the algorithm template.
- Download the custom template from the training platform and select the corresponding custom template to identify OCR data in special custom scenarios.

2. Software Introduction

2.1 Software main interface

Open the software and enter the main interface of recognition, see (Figure 1)

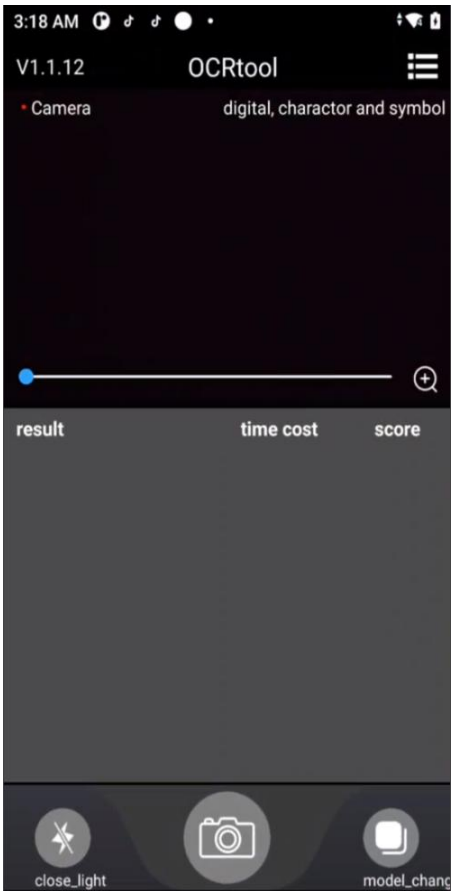

Figure 1

The main interface of recognition is arranged from top to bottom, which is divided into the top navigation bar, the recognition preview area, the recognition result display area, and the bottom toolbar

2.2 Top navigation bar

The top navigation bar (Figure 2) from left to right is the version number, software name, and menu bar.

Figure 2

Click the menu bar on the right to pop up the function menu, which are Software Settings, Data Templates, OCR Settings, and Exit, as shown in Figure 3

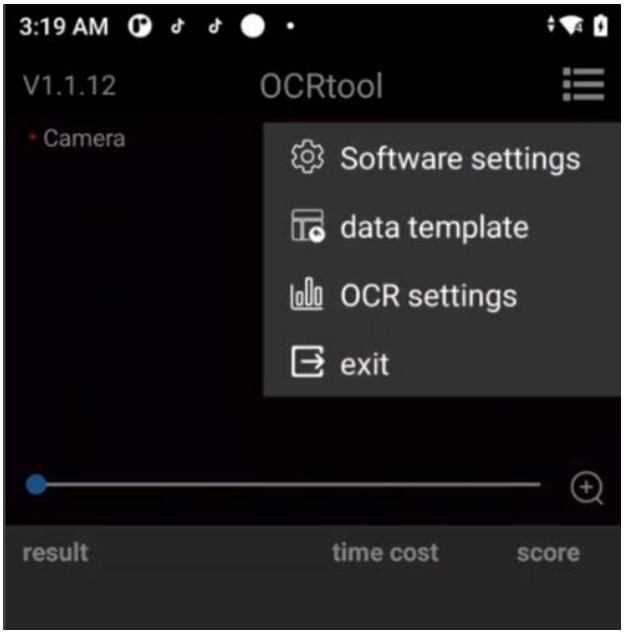

Figure 3

2.3 Recognition preview area

The recognition preview area (Figure 4-1) is the camera/scan engine image preview image display area, and the camera or scan engine preview can be switched in the recognition mode → OCR settings → the menu bar, or you can click the font switching mode (e.g.: click the scan head font to switch to the camera mode).

The white rectangular box in the recognition preview area is the OCR recognition area box, the white rectangular box is not allowed to be dragged and scaled, and only the image within the white rectangular frame can be recognized.

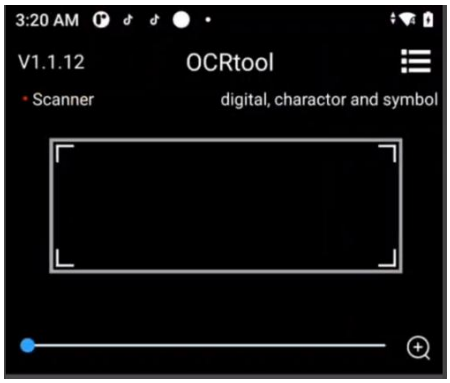

Figure 4-1

Figure 4-2, the white rectangular box in the recognition preview area is the OCR recognition area box, the white rectangular box allows to be dragged, scaled, and only the image within the white rectangular box can be recognized.

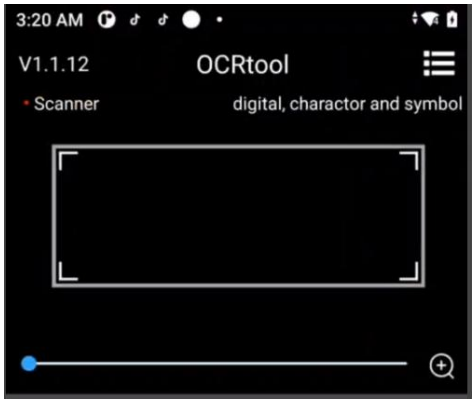

Figure 4-2

The recognition box allows background configuration, bound to the template.

Figure 4-3 Click **the magnifying glass** to increase the magnification effect of the view. Below is the preview interface magnification slider, the slider value range is 0 to 1 00, the slider bar is 0 means no magnification, 1 00 magnification to the maximum, the maximum magnification of the camera is determined by the hardware support of the device, the maximum magnification of the scanning head is 2x, and the sliding data is automatically saved.

Figure 4-3

2.4 Recognition result display area

The recognition result display area (Figure 5) is mainly used for the information display of OCR recognition content. The display results mainly include: recognition content, time consumption, and scoring, and the recognition content is OCR recognition results; The recognition time is the actual time taken to estimate OCR (Note: the timing does not start from clicking the start button); The score is the confidence level of the recognition result, the highest is 100, the lowest is 0, the higher the score, the higher the confidence, click Clear , you can clear the data.

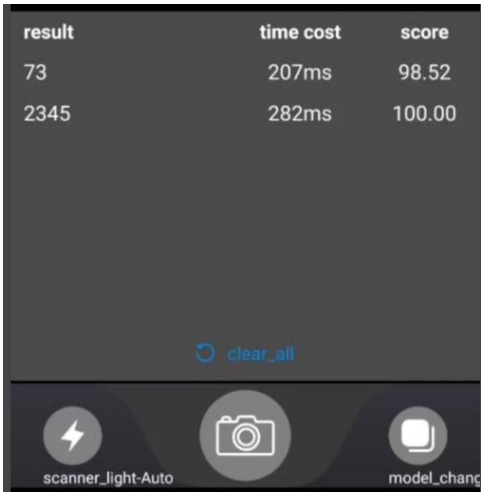

Figure 5

2.5 Bottom toolbar

The bottom toolbar is divided into four parts: **light control, exposure degree (auto, low, medium, high), OCR recognition switch, template selection**;

Camera mode (Figure 6-1):

The left side is the light switch, the camera light is off by default, click the light control button to turn it on.

Figure 6-1

Scan mode (Figure 6-2):

The left side is the exposure mode, switch to select the corresponding light mode, click to select the corresponding mode (**auto, low, medium, high).**

Figure 6-2

In the middle is the OCR recognition button, which animates to indicate that OCR recognition is in progress.

On the right side is the template selection button, click will pop up all the data templates in the current device (Figure 7), users can choose different data templates according to the situation.

Figure 7

3. Application settings

3.1 Basic Settings

Menu in the upper right corner of the main interface → Software Settings to enter the software settings interface (Figure 8)

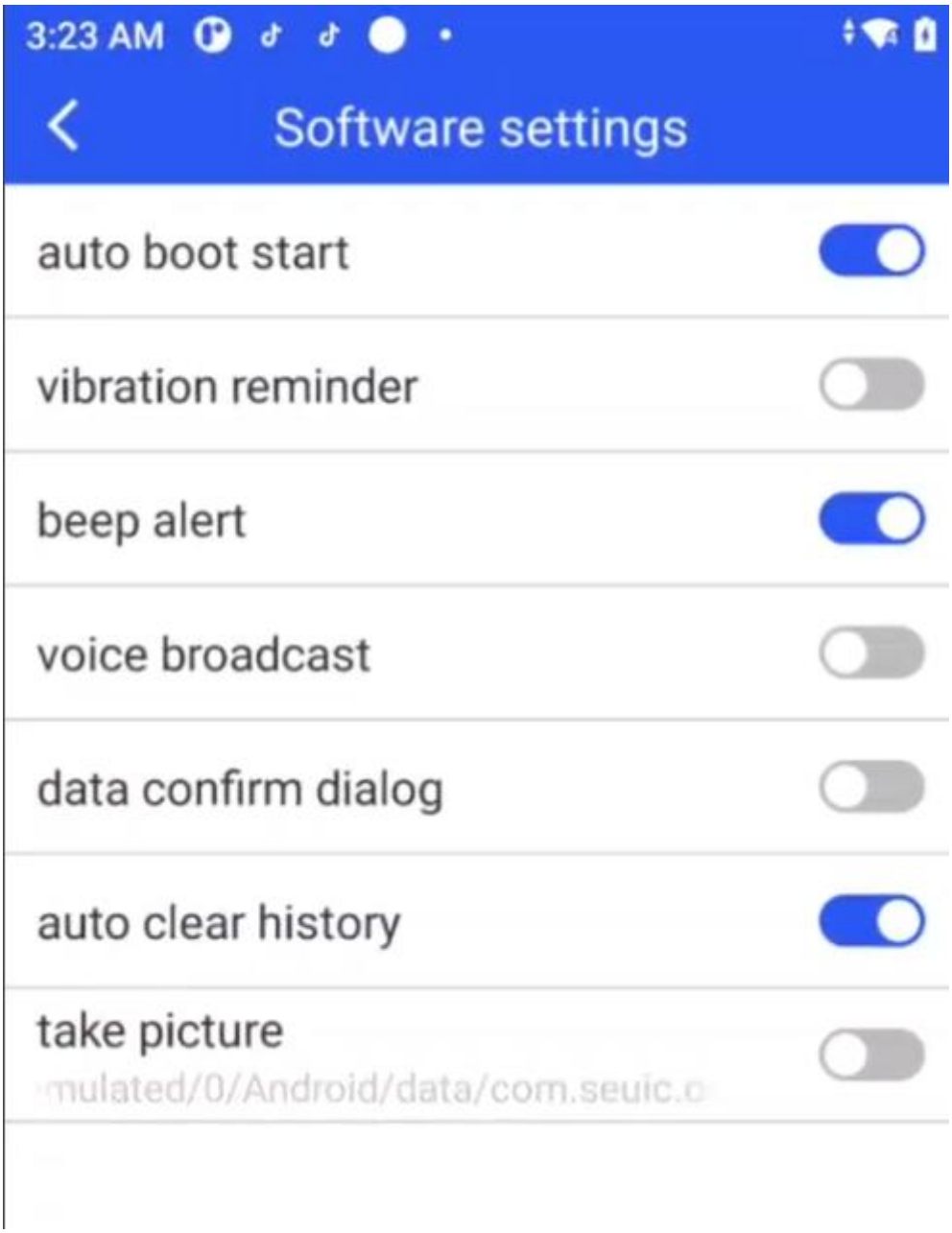

Figure 8

On this interface, you can start **automatically, vibrate prompt, beep prompt, voice announcement, data confirmation box. Automatically clear history, image taking** and other operations;

Automatic startup: When enabled, the software automatically starts the OCR background service. You can use the prompt window in the navigation bar at the top of the device to determine whether the service is enabled (Figure 9).

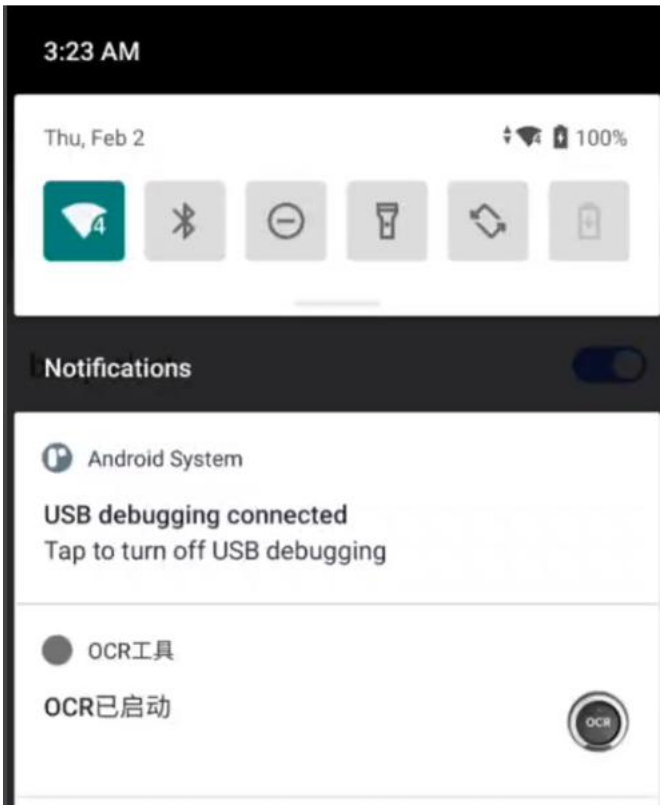

Figure 9

Vibration prompt: When OCR recognition is successful, the device will vibrate briefly once after the OCR recognition is successful

Voice broadcast: mainly control whether the recognized content is broadcast by voice, when the switch is turned on, when the data content is recognized, the data content will be broadcast at the same time.

Data confirmation box: Under normal circumstances, the device turns off the data confirmation box by default

When the device opens the data confirmation box:

A: When running in the app, the normal state is the same as the closed data confirmation box (Figure 10-1).

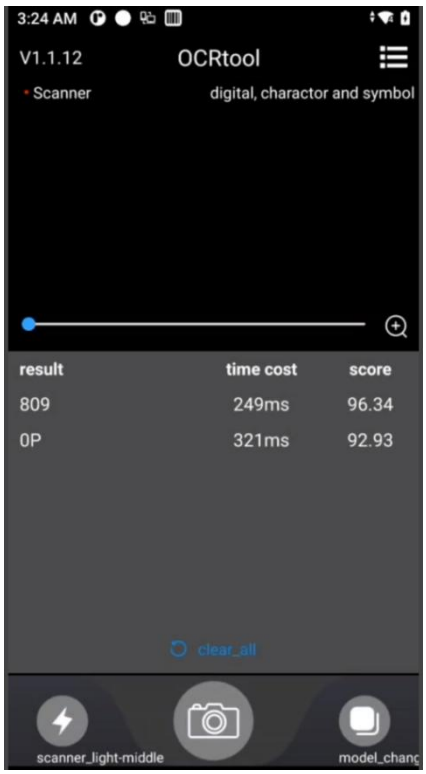

Figure 10-1

B: When the app runs in the background, the scanned data will jump to the app to send the data. （Click the corresponding data sending order to send the order of the data) Figure 10-2

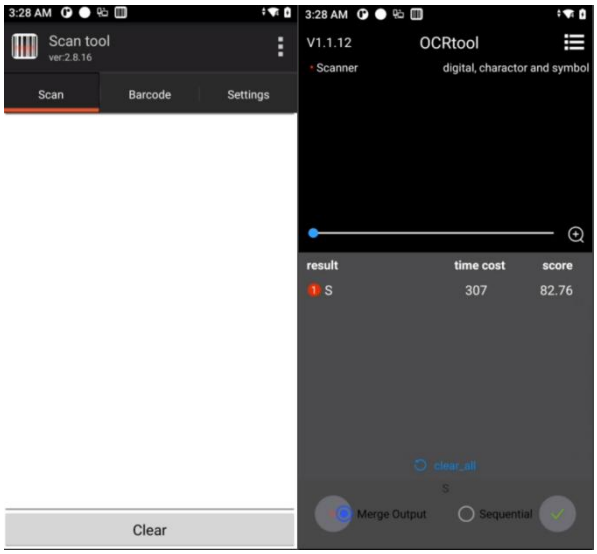

Figure 10-2

Automatically clear historical data: After this item is turned on, OCR recognition data will only display the currently recognized data content in the main interface of the software, and if it is disabled, the data content will be displayed cumulatively in the recognition result display area of the main interface.

Image: This item is used to control whether to save the recognition picture to the fixed path of the device during recognition.

4.Data templates

4.1 Sample Collection

Data templates → menu in the upper right corner of the main interface, and the interface is shown below (Figure 11)

Figure 11

This interface mainly completes the display of data templates. If the user has his own exclusive template on the SEUIC OCR training platform, the user will also display the data template on the network side when entering the interface, and then click the corresponding download button to complete the download of the data template.

Click the list template entry to enter the template details interface, which is displayed as follows (Figure 12):

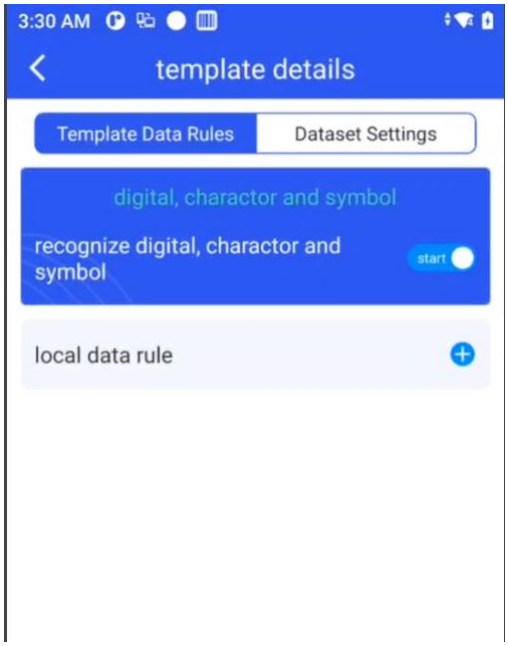

Figure 12

The template details interface can set the current template as the default template, and after setting the default template, the OCR tool will use the current template to identify character data;

Add local rule operations, mainly for the current template, and then add certain local rules to ensure the correctness of the identified output data, the local rules that can be added are shown in the following interface (Figure 13):

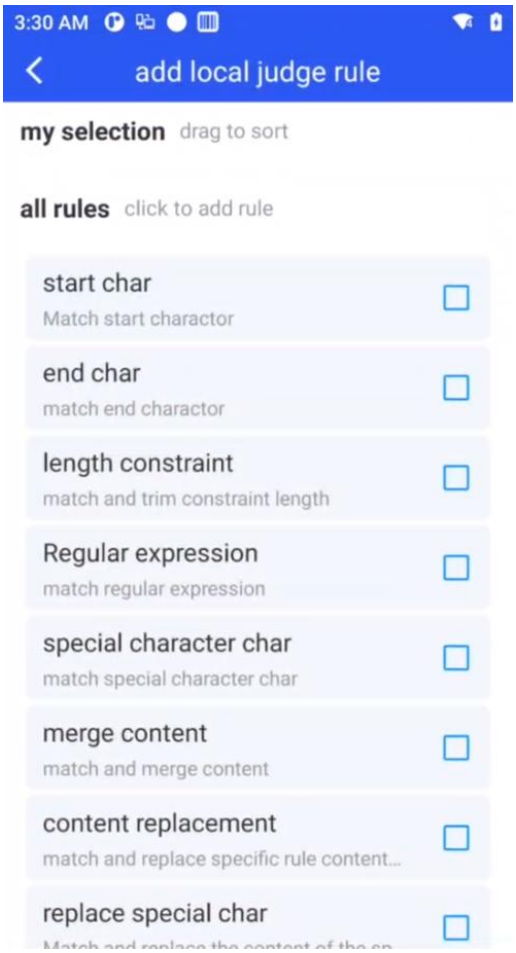

Figure 13

After adding rules, return to the template details page, click the corresponding rule, and the dialog box will pop up (Figure 14), enter the corresponding rule, and click OK.

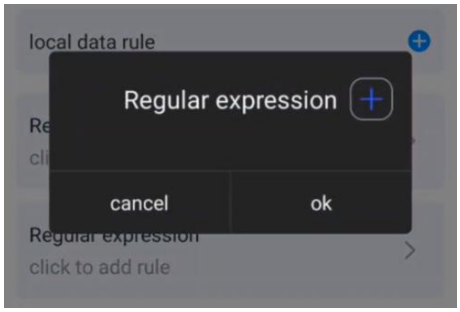

Figure 14

4.2 Sample Collection

Enter the dataset interface (Figure 15).

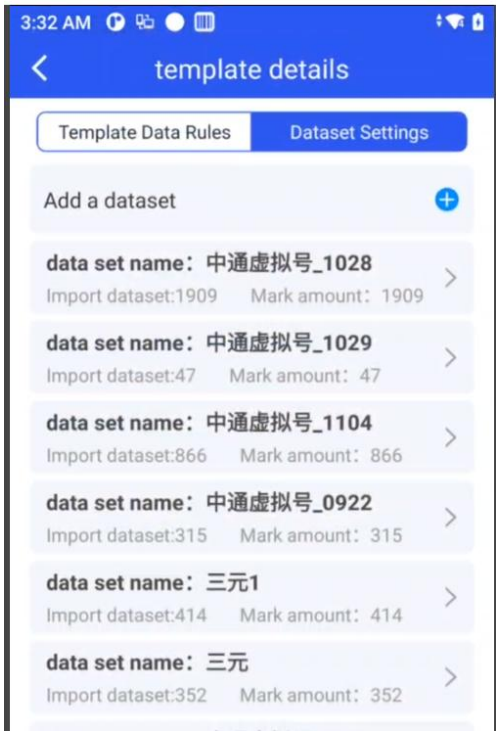

Figure 15

On the dataset page, all the data sets that have been created by the currently logged-in user will be listed, and users can click the list drop-down to refresh the dataset information. Click the Add button at the top to enter the interface of adding a dataset (Figure 16)

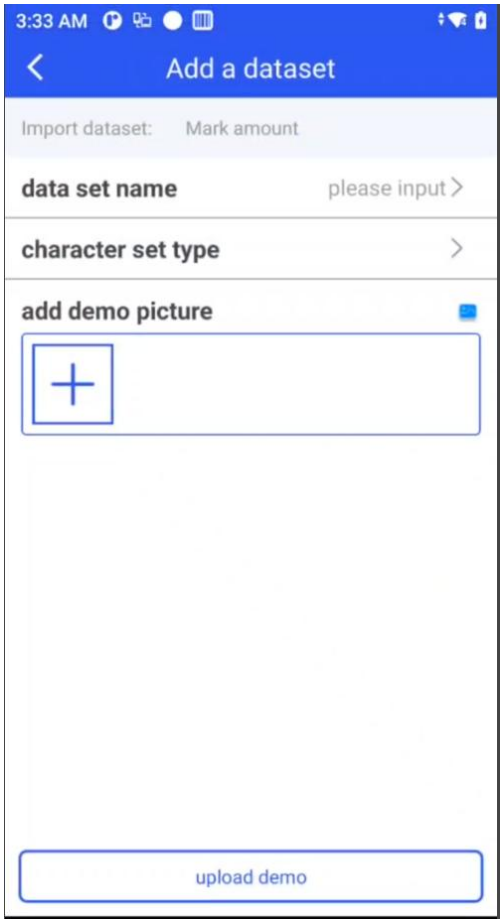

Figure 16

Then click the button below Add Sample Image  to enter the image taking and picture selection interface (Figure 17), the interface is as follows:

Figure 17

Click the prototype button in the middle to complete the photo sampling operation; Click the down arrow button to the left of the circular button to enter the image selection interface (Figure 18)

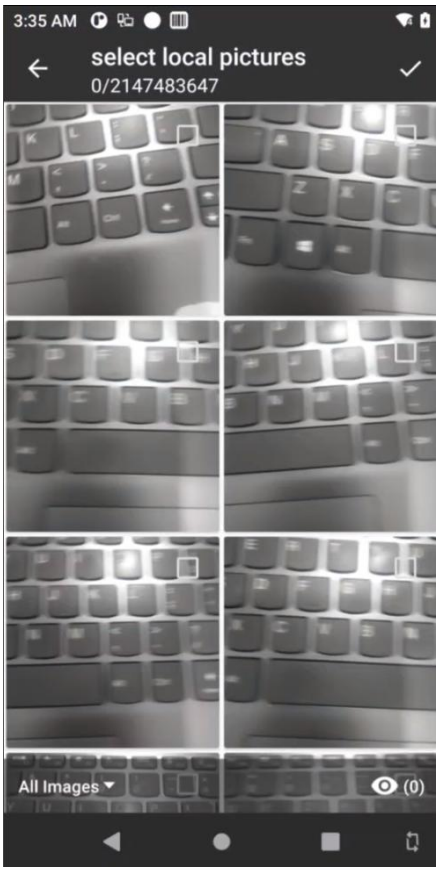

Figure 18

You can select the prepared sample image, then return to the Add Dataset interface (Figure 18), and click the Upload Sample button to complete the upload operation of the entire sample image.

5. OCR settings

The menu in the upper right corner of the main interface → OCR settings, and the interface is displayed as follows (Figure 20)

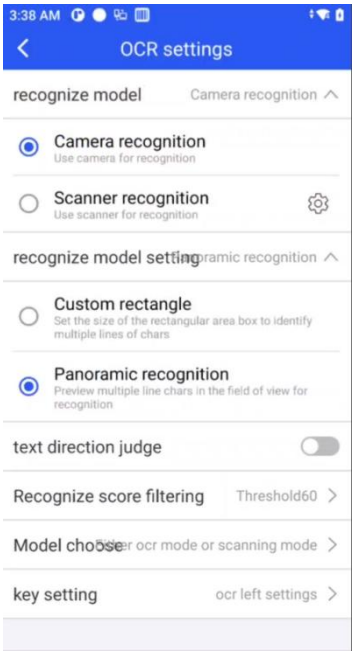

Figure 20

This interface mainly provides OCR recognition mode, recognition area setting, text direction judgment, recognition score filtering, mode selection, button setting and other related OCR settings.

5.1 Recognize patterns.

The main choice is whether to identify with the camera or with the device scan engine. When camera recognition is selected, the recognized preview image comes from the camera; When Scan Head Recognition is selected, the recognized preview image comes from the device scan head (only supported by the SEUIC X3 scan head). When selecting the scan head recognition, you need to click the button on the right  to adjust the parameters of the scan head, and the interface is shown as follows (Figure 21):

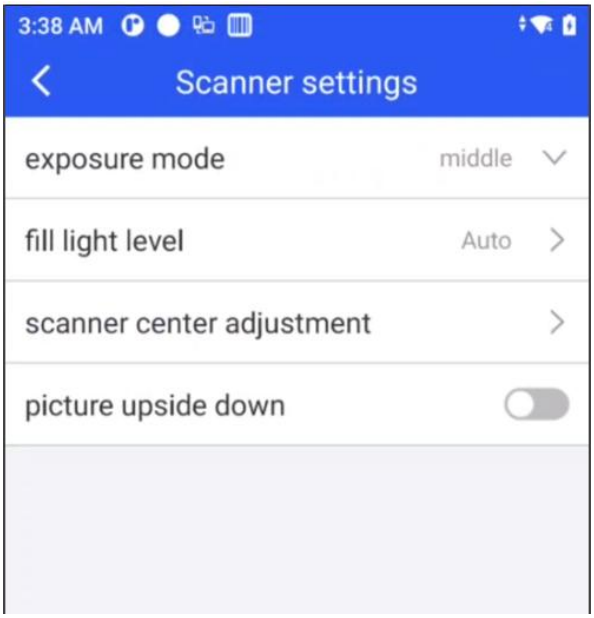

Figure 21

Exposure mode: refers to the exposure level of the scanning head, currently there are four levels of auto, low, medium and high to choose from, it is recommended to use auto;

Fill light level: refers to the level of the scan head fill light, there are automatic and level 1~10 optional, it is recommended to use automatic, the higher the fill light level, the higher the brightness of the fill light;

Scan engine center adjustment: this is mainly used for the center adjustment of the scanning head, when the scan data and the alignment deviation is large, you can use this item to adjust, generally not recommended adjustment;

Aiming light: This item is used to control the on and off of the aiming light;

Image upside down: mainly used for the forward and reverse adjustment of the scan head preview image, whether it needs to be adjusted, judging from the scan head preview image, if the preview image is reversed, you need to open the item.

5.2 Identify locales.

This item is mainly used to identify the size setting of the area rectangle when the interface preview is set.

5.3 Character direction judgment

This setting is used to set whether the text direction is automatically determined during OCR

recognition, and if this option is turned on, accurate character recognition can be completed when the preview image is reversed.

5.4 Identification score filtering

This setting item is mainly used for a filter on the recognition score of the recognized characters, effectively ensuring the correctness of the recognized data, the setting threshold range of this value is 0~100, the higher the threshold setting, the closer the recognized value is to the real value.

5.5 Mode selection

Mainly used for OCR recognition mode selection, 3 modes (Figure 22), 1. OCR mode or any one of the code scanning mode 2. There must be a code scanning mode, there may be an ocr mode 3. There must be an ocr mode, there may be a code scanning mode.

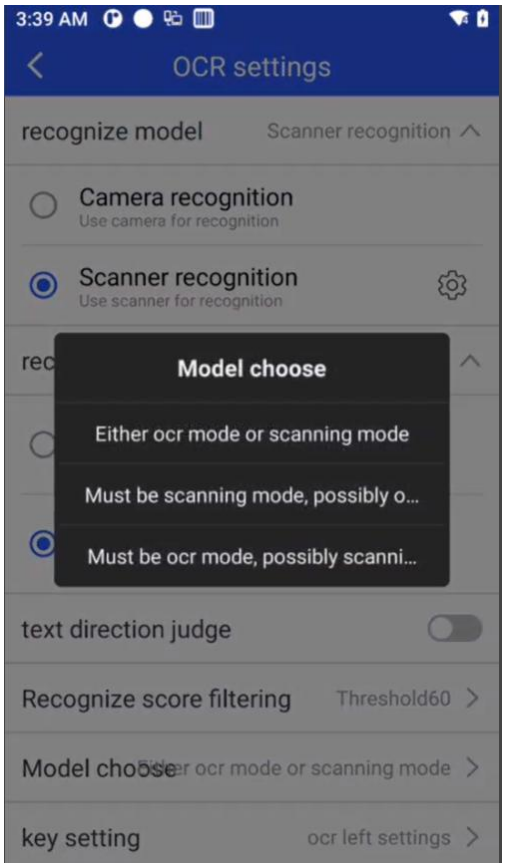

Figure 22

5.6 Key settings

It is mainly used to press the left and right middle monitor keys when the OCR tool is running in the background to perform the corresponding decoding. 3 parsing mode (Figure

23), 1. Do not set, 2. Left OCR, right scan code 3. Right OCR, left scan code

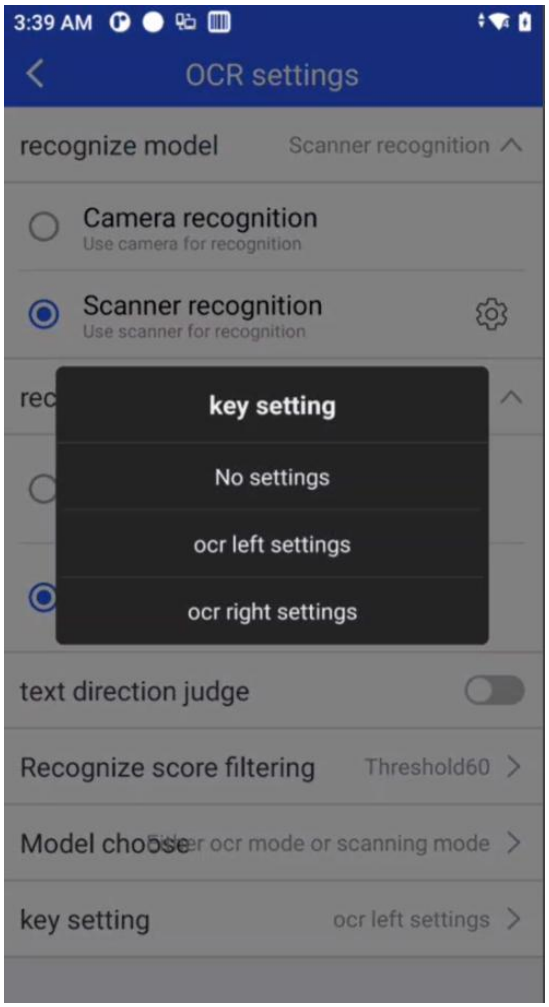

Figure 23

6. quit

Menu in the upper right corner of the main interface -> exit, the interface is displayed as follows (Figure 24)

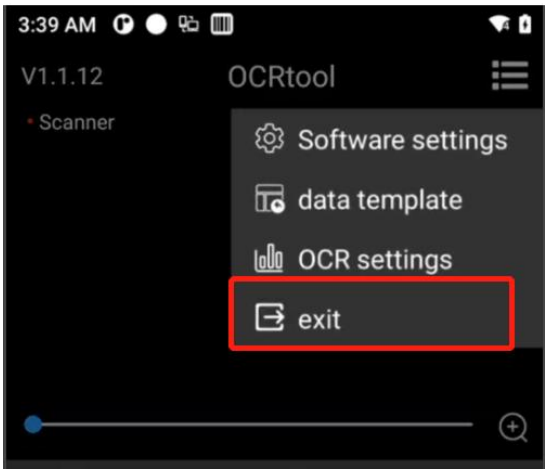

Figure 24

By clicking on the opt-out menu, the OCR identification tool exits completely, including the OCR service running in the background.