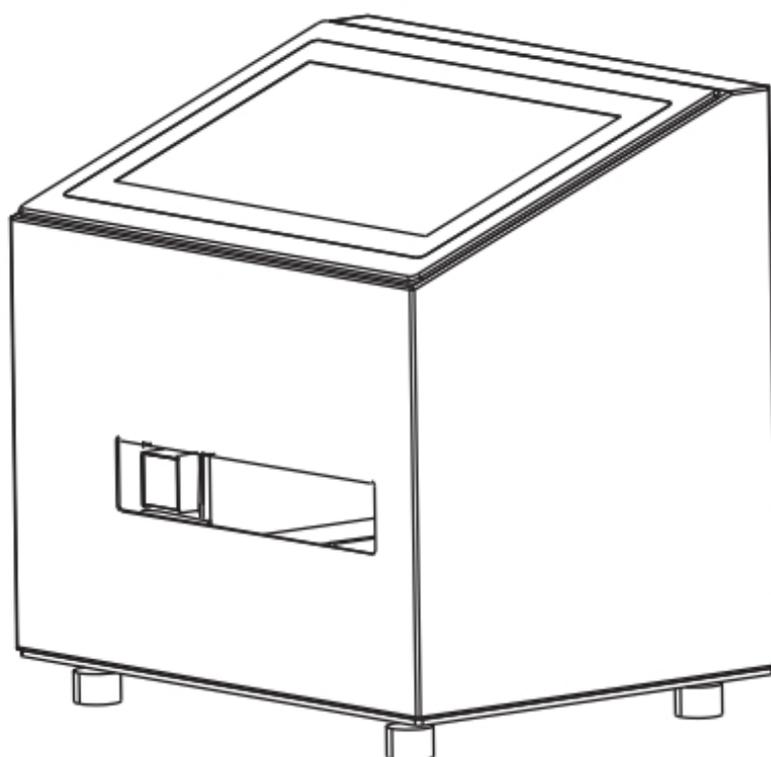


MD1 Desktop Static Inkjet Printer



User Manual

Revision V1. 2

Version History

Version	Modifications	Modified Date
V1.0	User Manual	April 2023
V1.1	Removing the magnetic protective cover	March 2024
V1.2	Added content related to printing external data	April 2024

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Chapter 1 Brief Introduction

1.1 Static Inkjet Printer

As shown in Figure 1-1, the MD1 desktop static inkjet printer is a semi-automatic inkjet printer, with the motor slide rail to automatically run and slide, accurate positioning, suitable for a variety of small and medium-sized product inkjet.



Figure 1-1 Desktop Static coding printer MD1

1.2 Parameters

Item	Description	SPEC
1	Model	Desktop Static coding printer MD1
2	System Language	Arabic, Simplified Chinese, Traditional Chinese, English, French, German, Greek, Italian, Korean, Persian, Portuguese, Russian, Spanish, Thai, Turkish
3	Adaptor	12V/4A
4	Maximum resolution	600DPI (150、300、600)
5	Print length	The longest print can be 90mm
6	Printing height	12.7mm
7	Printing mode	Hand press/sensor
8	Nozzle front/rear adjustable	5mm
9	Ink cartridge	HP original 42mL cartridge
10	Cartridge color	Black, white, red, yellow, green, blue, invisible
11	Motor	stepper motor
12	Print content	Text, image, barcode, counter shift code, date, time, expiration date, database, POD

13	Print material	Paper, stone, pipe, cable, metal, plastic, wood products
14	Work environment	Temperature 0-45°C (20°C-30°C is the best), humidity 40-60%R

Chapter 2 Safety information

2.1 Introduction

The purpose of this inkjet printer is to print information on the product. Using this equipment for other purposes may lead to serious personal injury or product failure.

2.2 General safety guidelines

- Do not use other power adapters without permission, otherwise it may damage the machine or cause serious safety accidents;
- Before using the machine, please check whether all the cables are damaged, otherwise it may cause safety accidents;
- Do not expose the machine too much to heat, strong light, fire or similar environment;
- Do not disassemble and repair the machine without permission. If there is damage, it is not in the warranty;
- Do not plug and unplug any accessories, cables and ink cartridges;
- Do not store or use the machine in too humid or dusty environment;

2.3 Usage specification

- Please use official certified ink cartridges;
- Do not plug the cartridge with power, otherwise it may damage the machine or cartridge;
- Please try not to exceed the nominal voltage and pulse width parameters of the cartridge for printing, otherwise it may shorten the service life of the cartridge;
- Printing ink cartridge is a precision object, if in the installation process is stuck, do not force, should adjust the position of the cartridge, insertion;
- If the ink cartridge is not clear, you can use a non-woven cloth to wipe the ink cartridge nozzle, do not shake the ink cartridge violently;
- When cleaning the machine, keep away from water and do not use chemical solvents for cleaning.

2.3.1 Emergency treatment scheme

Come up to smoke, such as printing machine can't control the continuous printing, fire, explosion and other emergency, **please power off immediately, close the equipment!**

2.3.2 Product warranty

3 Quality assurance: from within 12 months from the date of b/l, for the whole machine in addition to the ink cartridges for quality assurance, insurance does not apply to nature for their misuse, alteration, or improper use lead to problems.

The following circumstances are not covered by the warranty:

- 4 Use any non-original cartridges and unapproved OEM inks.
- 5 Disassemble or modify the product without approval.
- 6 Print head damage caused by improper installation.
- 7 Accidents due to natural disasters, storage or transportation conditions, such as (but not limited to) damage caused by falling, spraying with water or other liquids.
- 8 Damage to the machine caused using unapproved, wrong or unstable power supplies.

Chapter 3 Main Part

This chapter introduces the main components of the inkjet printer.

1 . [Main Machine](#)

2 . [Position Board](#)

3 . [Trigger Switch](#)



Figure 3-1 Main parts of the MD1 static inkjet printer

3.1 Main machine

The main machine is mainly composed of screen, built-in sliding table and nozzle. Control operations are performed through a graphical user interface (GUI).

3.1.1 Power Switch

The power switch button is used to turn on or off the inkjet power supply (see Figure 3-2) and is located on the back of the inkjet.

Note: Do not press the power switch to turn on the system immediately after shutdown.

It will take some time for the system to shut down. Please wait about 10s.



Figure 3-2 Power switch

3.1.2 Connector

The inkjet printer is equipped with a variety of interfaces for printing control and external interaction, as shown in Figure 3-3. The various available standard IO connections are provided in Table 3-1

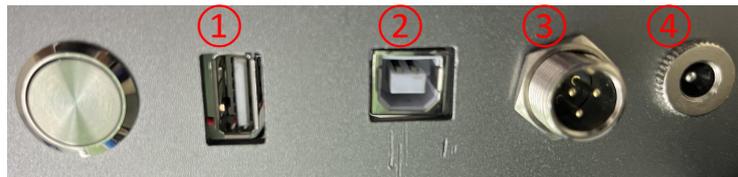


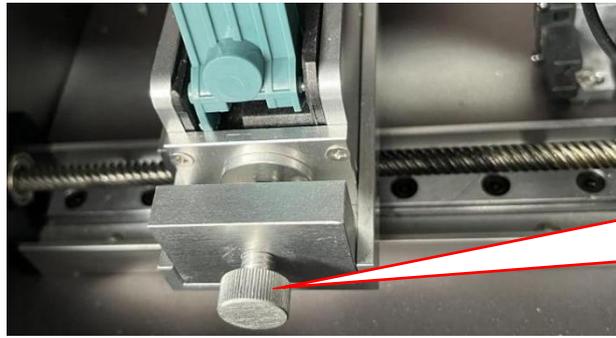
Figure 3-3 MD1 Connector

Connector	Type	Purpose of Connector
1	USB connector	Connect a USB flash drive.
2	USB-B connector	Used to connect the USB type b data cable to transmit external data for the inkjet printer.
3	Trigger interface	Used to connect external sensors, such as trigger switches.
4	Power port	Used to connect the power adapter to provide power for the printer.

Figure 3-1 MD1 Connector

2.1.3 Vernier device

Control the nozzle before and after adjustment, so that it can be sprayed on the plane, concave, arc, and better adapt to various products.



Turn the screw to adjust the position of the nozzle.

3.2 Position board

The positioning plate is convenient to debug and can be freely adjusted according to the size of the printed object, making the printing position more accurate.

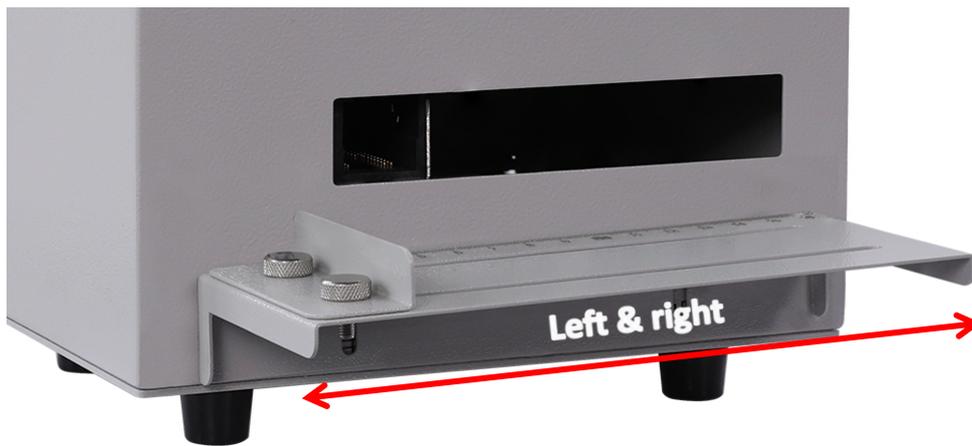


Figure3-4

3.3 Trigger switch

The printing signal is sent by manual press, to achieve one press and one spray.



Figure 3-5 Manual switch

Chapter 4 Operation

This chapter describes basic user operations, including the following topics:

- [How to power on](#)
- [User interface introduction](#)
- [How do I select a job to print](#)
- [Errors and warnings](#)
- [How to start printing](#)
- [How to stop printing](#)
- [How to power off](#)

4.1 How to power on

Open the printer as follows:

1. Perform the appearance check. Make sure all connections are secure and cables are connected correctly.
2. Ensure that the main power cable is connected.
3. Press the power switch on the back of the printer.
4. After the printer is successfully started, the screen will display the user operation interface.

4.2 User interface introduction

The user interface is a push-button based control system. It has an easy-to-use touch screen, and most areas of the display are active. All technical aspects of the printer setup and control are done through the tool button.

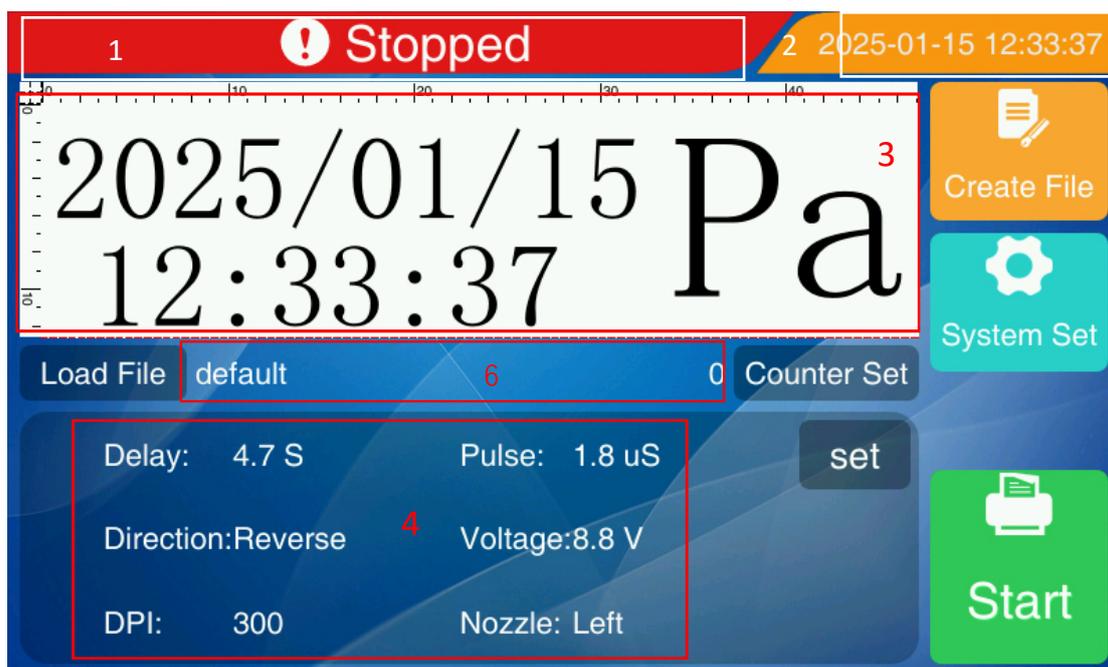


Figure 4-1 Home page interface

按钮	名称	描述
	Create New File	On the edit screen, you can quickly create a new print file.
Load File	Load a file	Perform operations on saved files. For example, edit, delete, select print, etc.
	Print Setting	Modify print parameters/Save print parameters.
	System Setting	Set the system language and view the current software version.
Counter Set	Counter setting	Set counter parameters. For example: starting value, step value, current value, etc., you can reset the print times.
	Start Printing	1, click the button when free, the inkjet will verify the legitimacy of the ink cartridge, and enter the print state, the print key turns red. 2, click the button during the printing process, the inkjet printer will stop printing, and the print key will return to green.

Item	Area Name	Description
1	status bar	Used to display the working status of the inkjet printer. 1、idle condition: No printing 2、print (work) status: Printing 3、The amount of ink reaches the alarm value: Ink value low
2	system time	This area is used to display the current system time and change the system time.
3	File preview area	This area is used to display information about the current printed file. You can drag this area to view information outside the displayed area.
4	Print parameter	This area is used to display the print parameters currently in use.
5	Ink volume display	This area displays the amount of ink remaining in the cartridge currently in use.
6	file	1, used to display the file name of the current print file.

	information	2, used to display the number of current printing, you can calculate the number of products for a job.
--	--------------------	--

4.3 How do I select a job to print

1. Click home page **Load File** button, Select the job from the File List or enter the desired job name in the search box.
2. After you select a job from the list, a preview of the job is displayed on the right side of the screen. See Figure 4-2.



3. Click  button, back to system home page. [\(Select job in the print state, directly enter the print state, print content update\)](#)

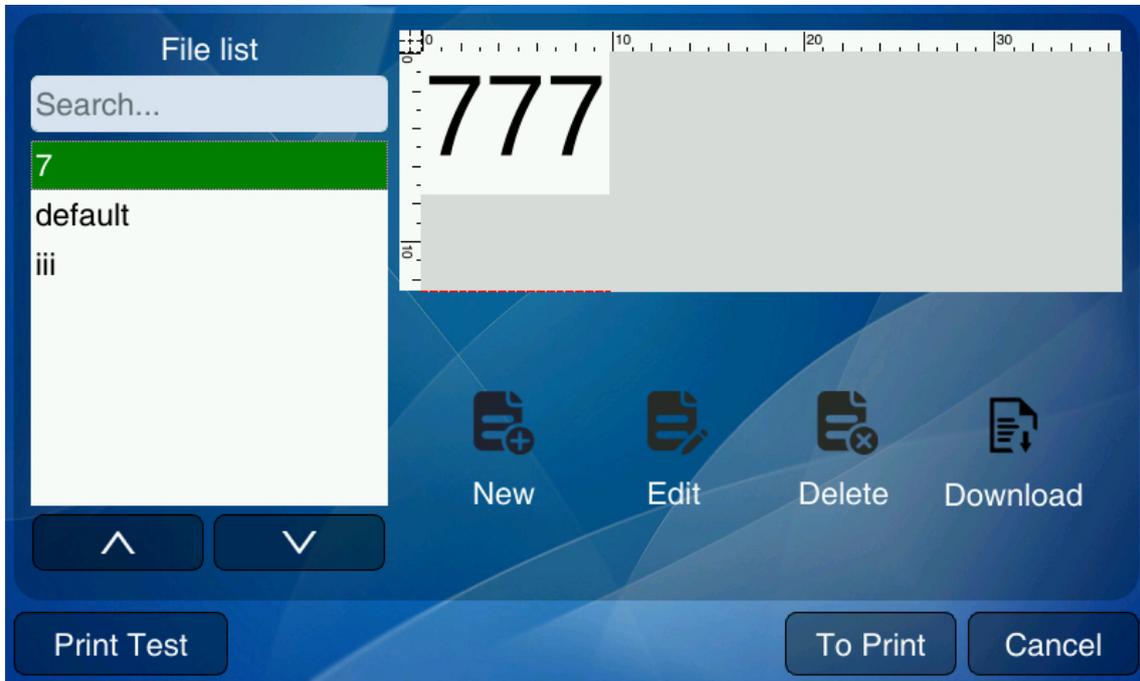


Figure 4-2 Printing selection interface

4.4 Errors and warnings

When a fault occurs, the printer will pop up a fault message in the middle of the screen.

4.5 How to start printing



Click  button, When the printing operation is started and the button turns red, the device is in the printing state. Press the trigger switch to print.

4.6 How to stop printing



Click button, the inkjet printer status is changed to stop printing.

4.7 How to power off

Stop printing before turning off the printer.

If the printer status is to stop printing, directly press the power switch on the right side of the printer [\(The inkjet printer is protected by power failure. After shutdown, wait for about 10S before the next startup operation can be performed\) .](#)

Chapter 5 Task Editor

This chapter describes the basic operations of the job editor, including the following topics:

- [How do I create a new print file](#)
- [How do I edit print file](#)
- [How do I edit a print file already saved](#)
- [How do I delete/copy file](#)
- [How do I edit external variable data](#)

5.1 How do I create a new print file

This chapter describes how to create a new print file in two ways: 1, using the "New File" function, 2, using the "Load file" function. Either of the two methods can go to the page for editing files. The following describes the specific operations.

5.1.1 Use "New File" function



1、Click home page button, the page for editing the file is displayed. See Figure 5-1.

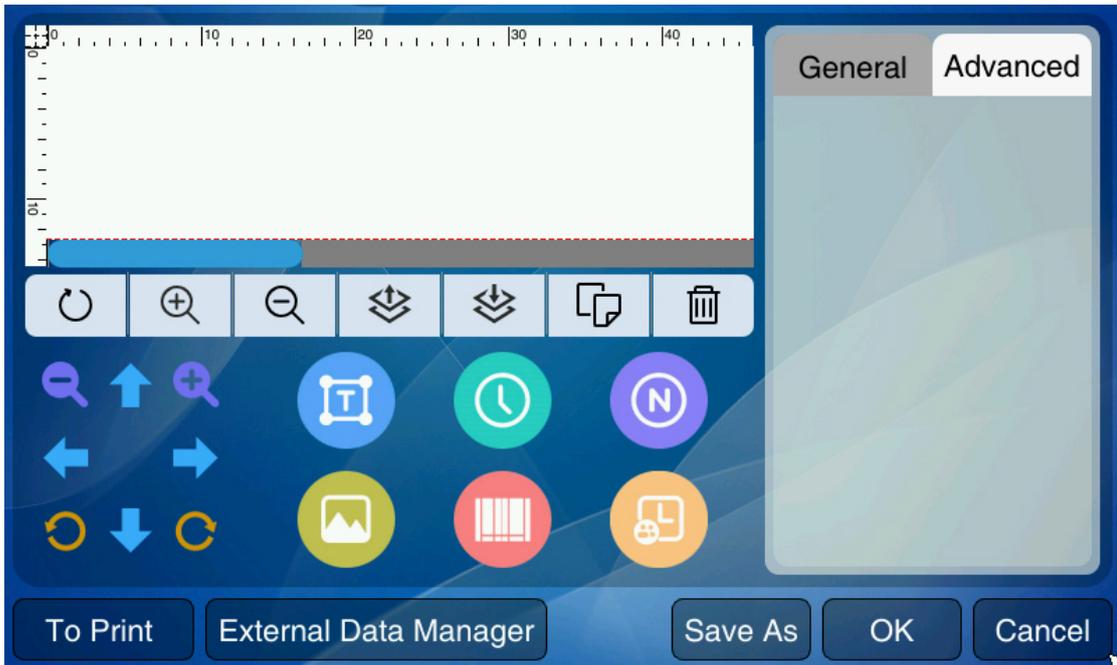


Figure 5-1 File editor interface

Button	Description
To Print	After the file is saved, the edited information is updated directly to the main interface. If the device is in print state, it will be updated to the newly edited content at the next print.
OK	The file is saved locally and cannot be updated to the main interface.
Save As	Modify the saved print file name.

2、 After editing the information we need, you can select a button **To Print** or **OK** button at the bottom of the screen to save the edited information.

3、 The file saving page is displayed, and enter the file name, as shown in Figure 5-2. **Note that only numbers, letters and Chinese characters can be used, not symbols.**

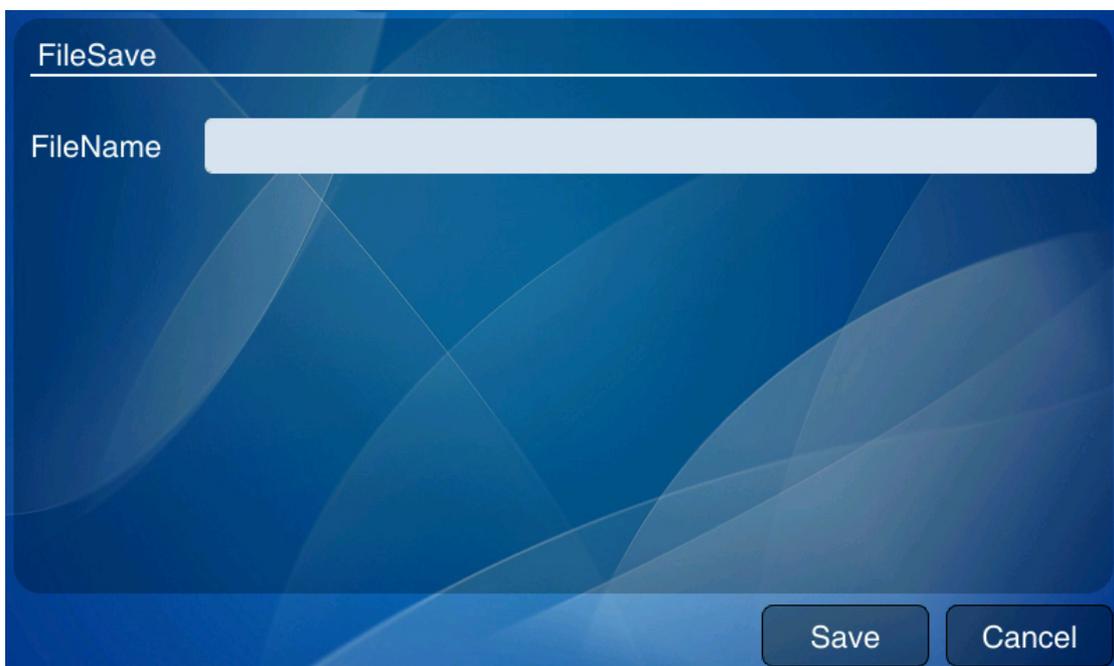


Figure 5-2 File Saving interface

4. Click **Save** button, the file is saved successfully, and the system returns to the main screen.

5.1.2 Use “Load File” function

1. Click home page **Load File** button, the page for loading files is displayed. See Figure 5-3.

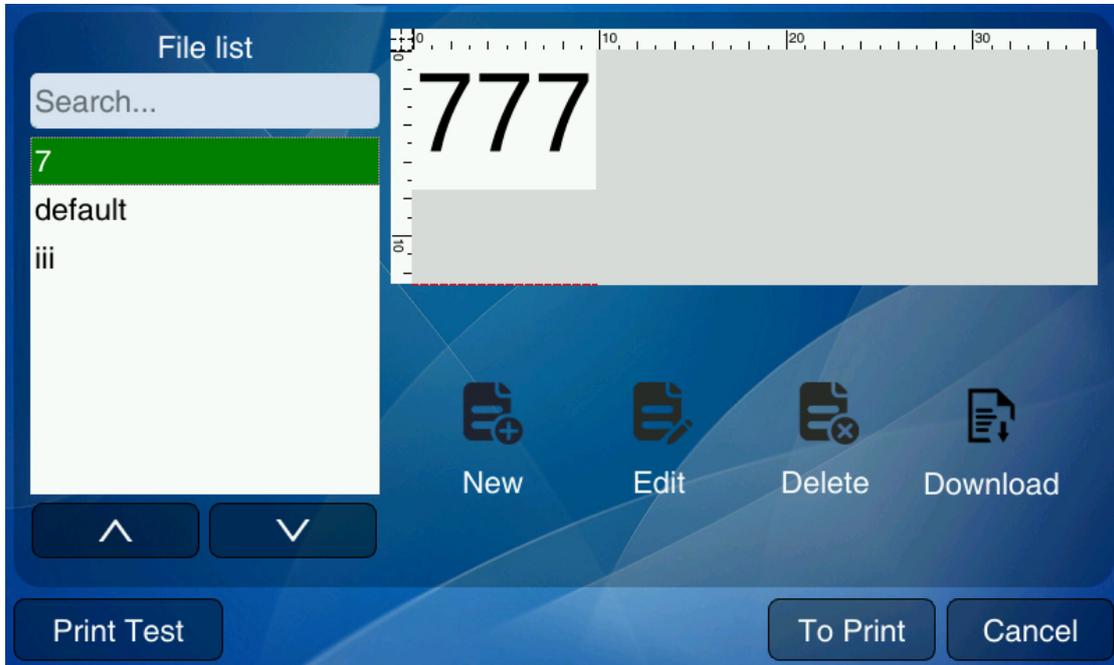


Figure 5-3 File loading interface

2. Click  button. The page for editing the file is displayed. As shown in Figure 5-4. On this screen, you can enter the required information according to your requirements.

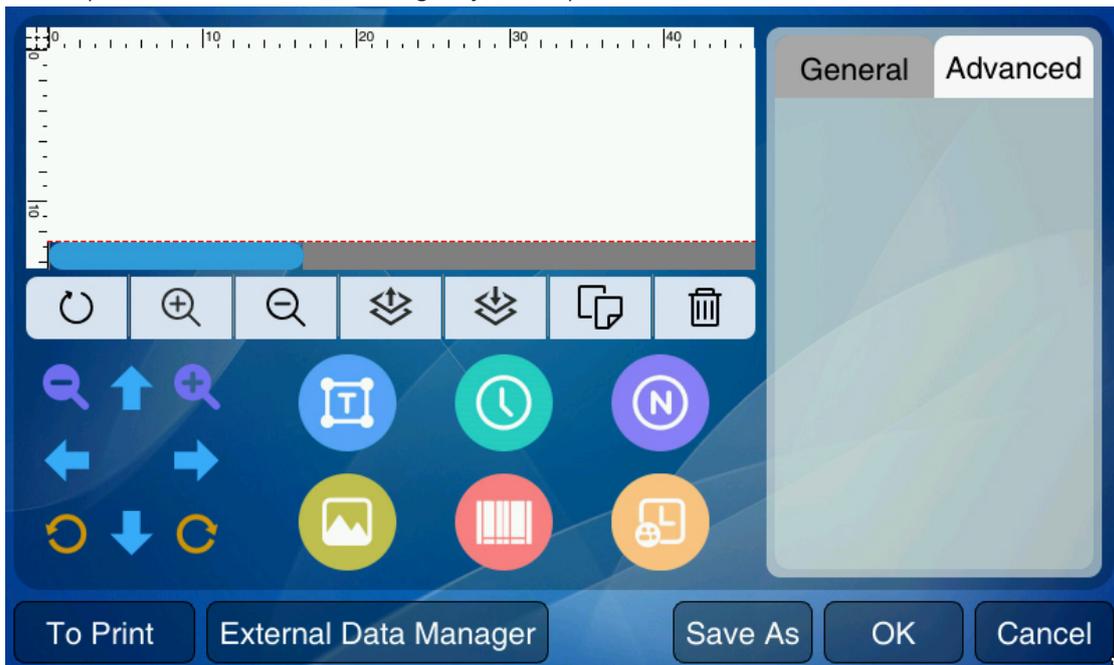


Figure 5-4 File editor interface

3. Click **OK** button, As in step 3 in 5.1.1, you can enter the file name to save the file.

4、Click **Save** button, The file is saved successfully, and the system returns to the page for loading files.

5.2 How do I edit print file

This chapter describes how to edit different print information.

1、 Follow the two methods described in section 5.1 to bring the system to the edit file interface. As shown in Figure 5-5.

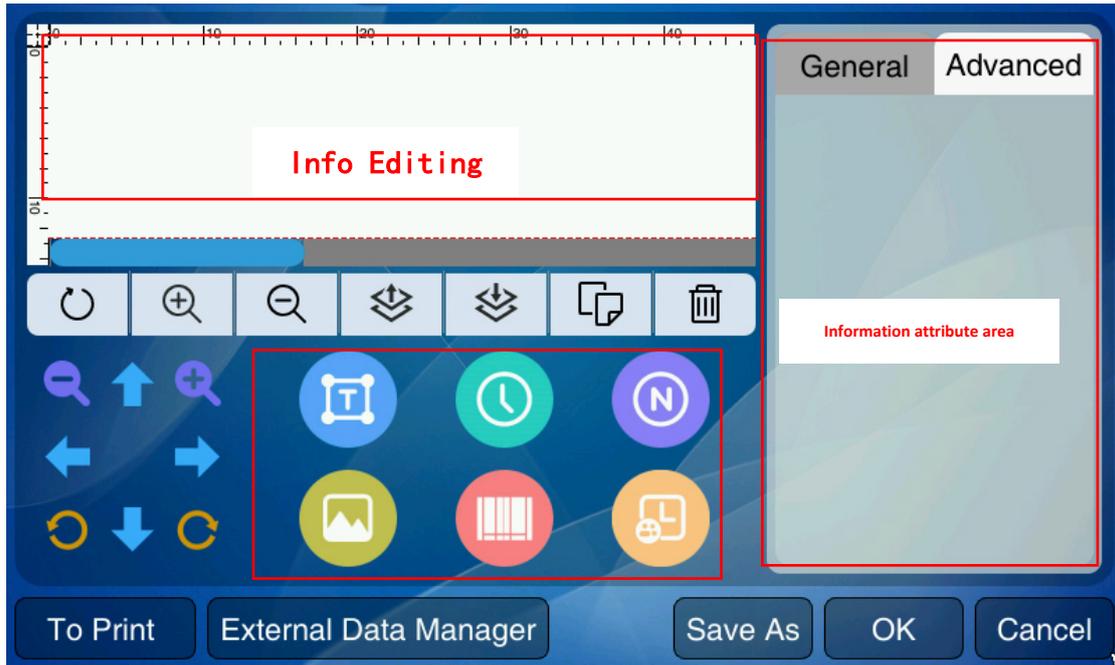


Figure 5-5 File editing interface

2、 On the Edit file interface, you can edit the printed information. The displayed information can contain Text, Time, Serial number, image, bar code, and shift code.

Item	Button	Description
1		Restores the enlarged or reduced information in the message editing area to its initial state.
2		Zoom in to view the information content in the information editing area.
3		Zoom out to view the information content in the information editing area.
4		When two pieces of information overlap, the selected information is at the top layer and the content is visible.
5		When two pieces of information overlap, the selected information is invisible at the bottom.
6		You can delete the information in the information editing area.

Button	Description
	Used to adjust the font size of the message.
	Adjust the position of the information according to the direction of the arrow.
	Adjust the rotation Angle of the information according to the direction of the arrow.

5.2.1 Text editing

1、 If you need to print Chinese characters, English, numbers, symbols, etc., please click the  button in the "Information Button Area", and a default text entry will appear in the "Information Editing area". Click the content box of "Information Property Area" and enter the required information in the pop-up keyboard. As shown in Figure 5-6.

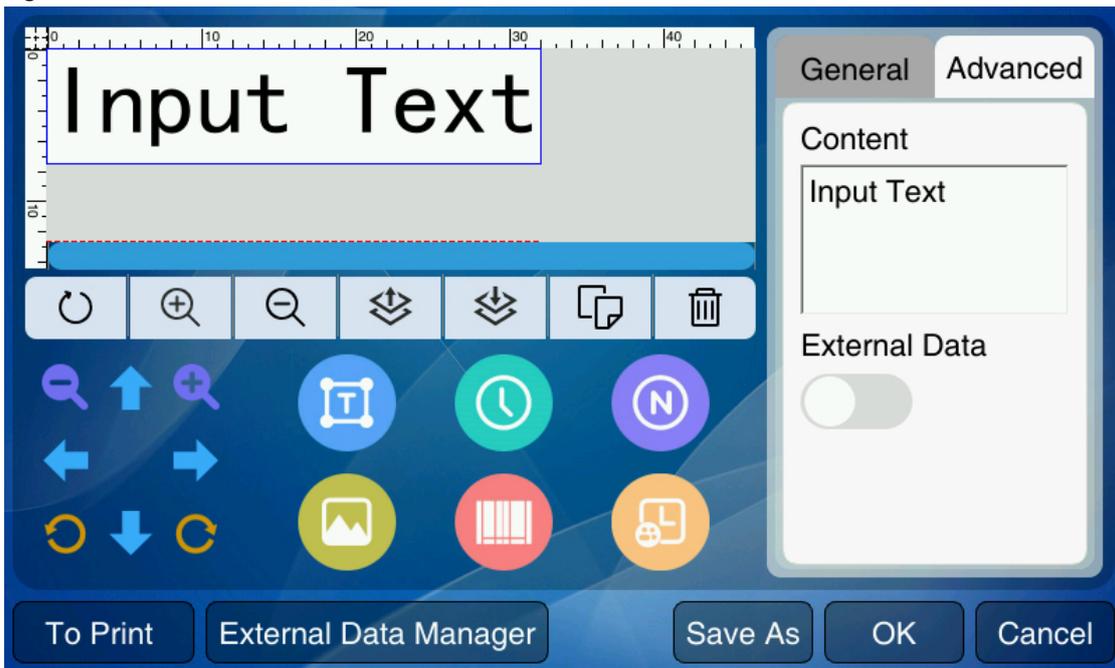
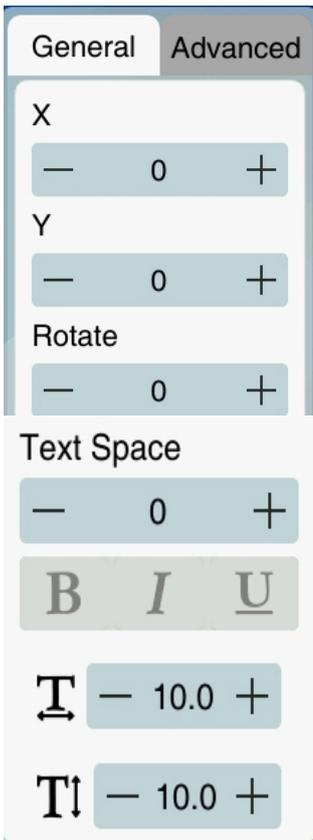


Figure 5-6 Text Editing interface

3、 In the general option of "Information property area", you can adjust the position of the text entry, font, size and other attributes.



Item	Button	Description
1	X	Press the + or - sign to adjust the position of the text on the X-axis.
2	Y	Press the "+" or "-" to adjust the position of the text on the Y axis.
3	rotation	Press the "+" or "-" sign to adjust the rotation Angle of the text.
4	Font	Click on the font drop-down box to choose font styles.
5	font size	Press the + or - sign to resize the text.
6	Text spacing	Press the + or - sign to adjust the distance between the texts.
7	B	Click to make the base color white and text bold.
8	I	Click on the background color to turn white and the text to tilt.
9	_	Click to make the background white and underline the text.
10		Font landscape zoom. By adjusting the value, the font can be lengthened horizontally.
11		The font is scaled vertically. By adjusting the value, the font can be lengthened lengthwise.
12		Restores the scaled font to its default state.

5.2.2 Time Editor

1、 If you need to print variable time, that is, the time content in the printed information is automatically

updated without human intervention, please click the button  in the "Information button area", and a default time entry will appear in the "Information editing area". As shown in Figure 5-7.

2、 In the advanced options of "Information Properties Area", you can set the format of the time, valid days, etc. [See Appendix 1 to customize the time format](#)

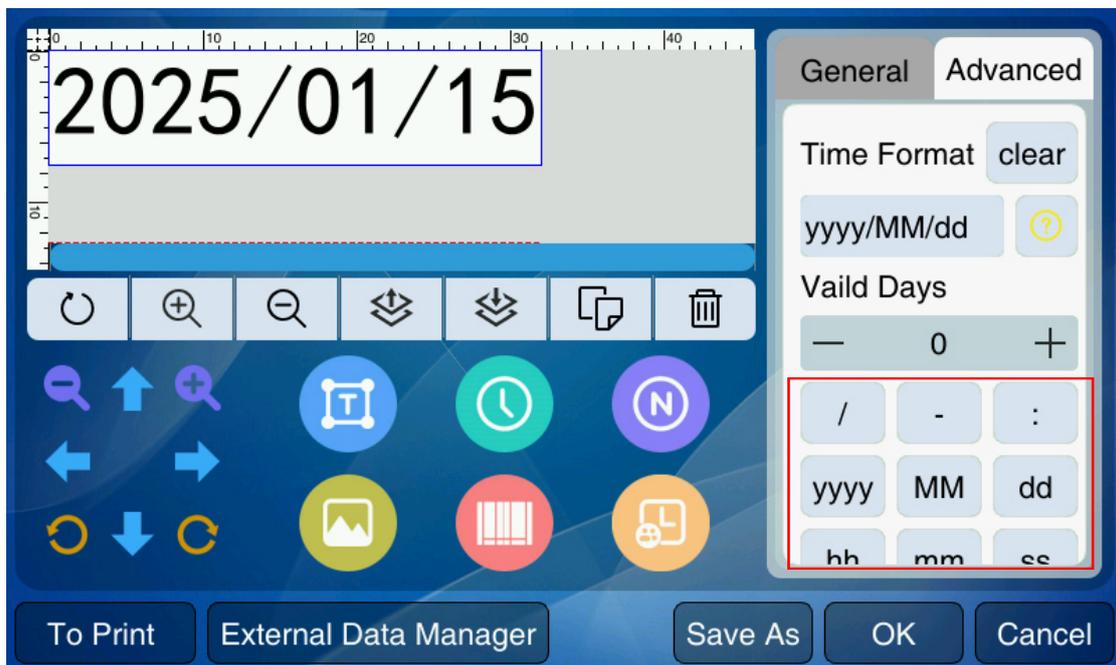


Figure 5-7 Time editor interface

4、 In the general option of "Information attribute area", you can adjust the position of the time entry, font, size and other attributes.

Item	Selection	Description
1	time format	Freely combine formats via keyboard or bottom shortcuts.
2	Valid days	The number of days after the current system time increases.

5.2.3 Sequence number editing

1、 If you need to print a variable serial number, that is, the count content in the printed information is automatically updated without human intervention, please click the button in the "Information button area", and a default serial number entry will appear in the "Information editing area". As shown in Figure 5-8.

2、 In the advanced options of the Information Properties Area, you can select different fixed bits, the maximum number of bits is 8 (the high number is filled with 0), or you can select a custom prefix (when the prefix is set to blank, that is, equivalent to a natural number).

3、 [The inkjet system consists of four counters](#), That is, "Counter 1", "counter 2", "counter 3", and "counter 4" in the "Counter ID" drop-down box. You can set the start value, step value, current value, end value, and number of repetitions of the four counters by clicking "Count Settings".

4、 In the general options of the "Information Properties Area", you can adjust the position, font, size and other properties of the serial number entry.

5、 In the advanced options of the "Information Properties Area", select the "separator" button to add thousands of separators to the serial number entry.

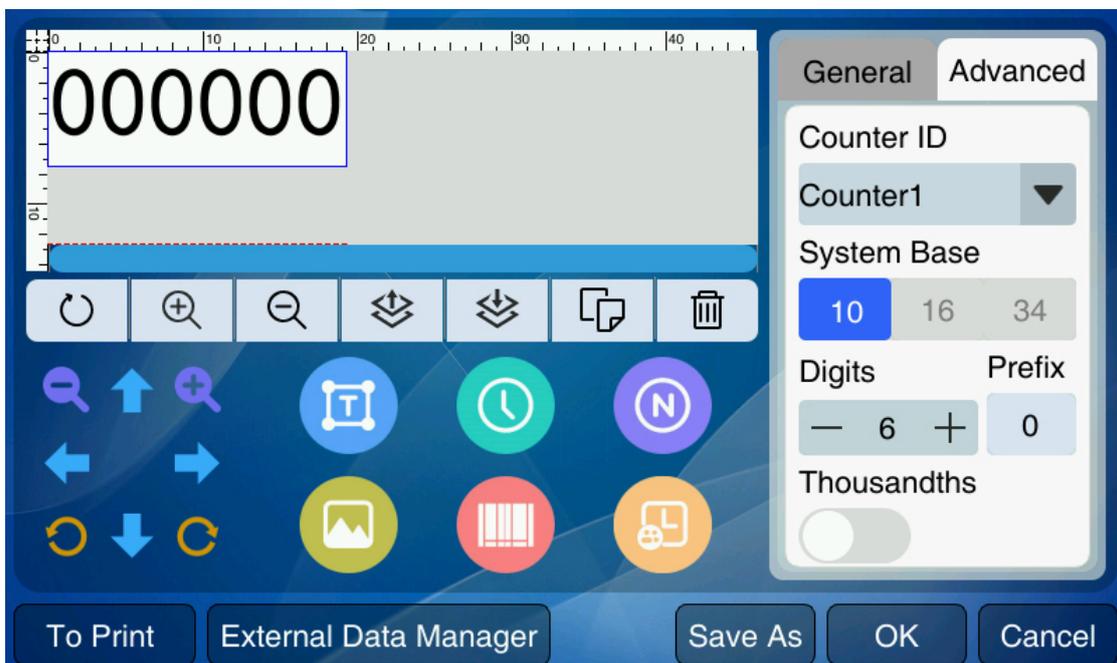


Figure 5-8 Serial number editing interface

5.2.4 Picture Editor

- 1、 To print an image, click the "Info Button area"  button, and a default "Image" image entry will appear in the "Info Edit Area". As shown in Figure 5-9.

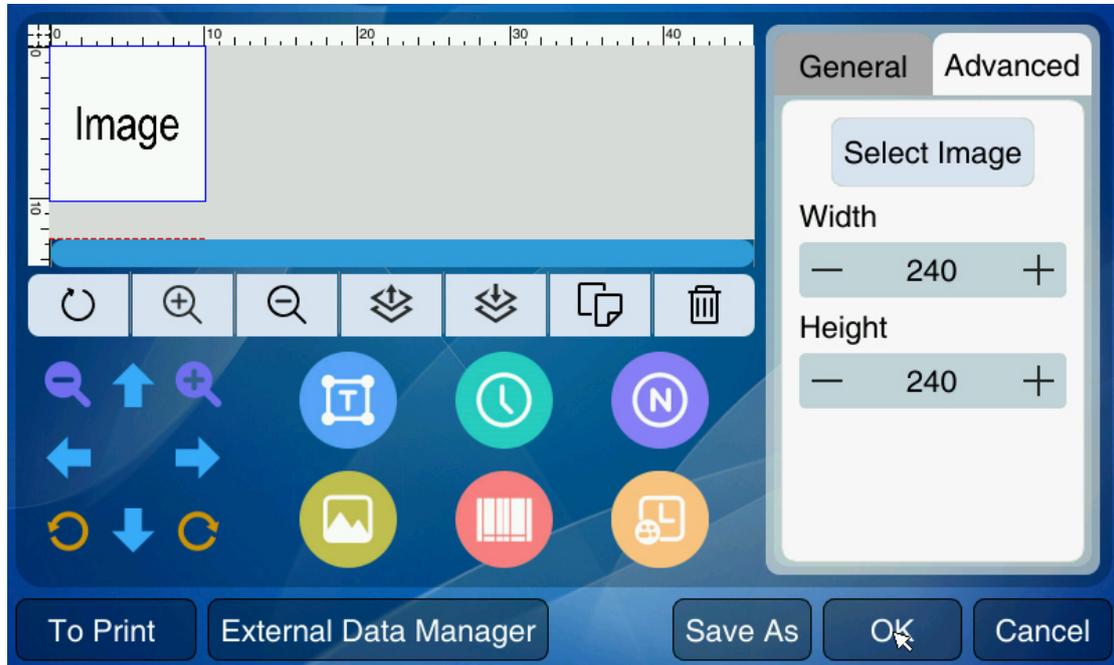
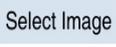


Figure 5-9 Picture editor interface

- 2、 In the advanced options of the Information Properties Area, click  button, Select the image file you want to print and adjust the height and width.
- 3、 In the general option of "Information attribute area", you can adjust the position of the time entry, rotation Angle and other attributes.

Notice, The system supports image formats such as png, jpg, and bmp. In addition, if your image is imported from a USB flash drive, the image will be automatically copied to the local.

5.2.5 Bar code editing

- 1、 To print a barcode, click the button  in the "Information Button Area" and a default QR code entry will appear in the "Information Editing area". As shown in Figure 5-10.

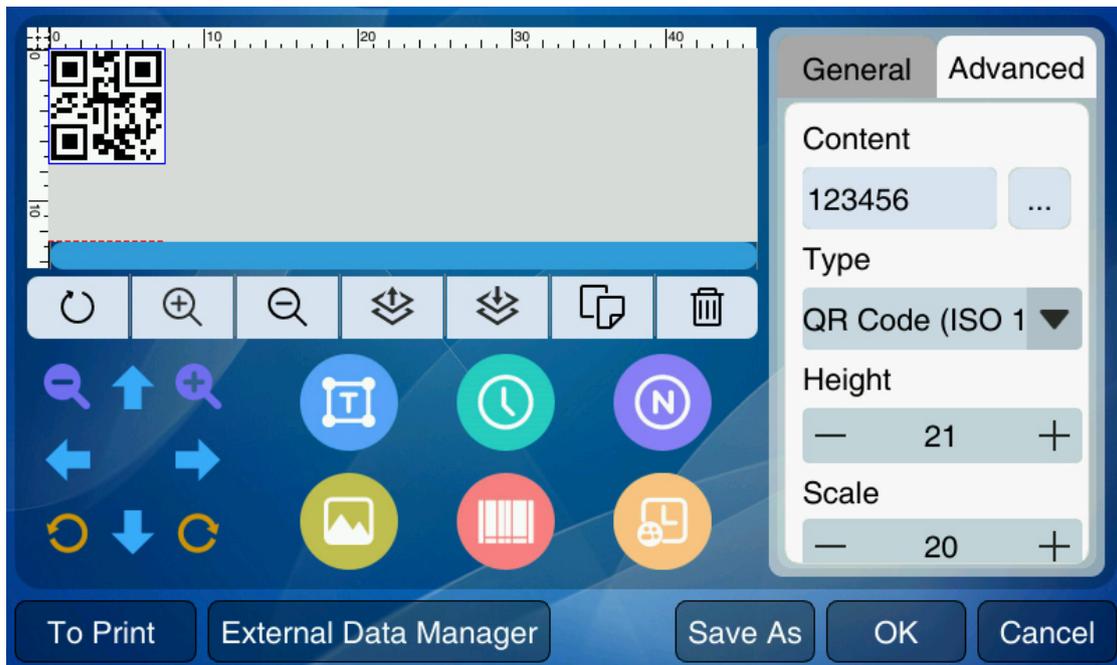


Figure 5-10 Bar code editing interface

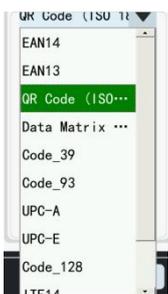
2、 Click the content box of "Information Property Area" and enter the required information in the pop-up

keyboard.

3、 In the general option of "Information Property area", you can adjust the bar code entry position, rotation

Angle and other properties. .

Item	Button Name	Description
1	Type	Click the drop-down menu to select the type of bar code.
2	Height	Press the "+" or "-" sign to adjust the bar code height (only in the bar code effect).
3	scaling	Press "+" or "-" to scale the bar code size.
4	Display text	Click the button below the display text to make it blue to display the text, otherwise it will not be displayed.
5	data pattern	You can select the Standard mode and GS1 mode.
6	external data	External devices can be connected to print variable information.



1、 It should be noted that different barcodes have their own definition specifications, and if the edited content does not meet the corresponding barcode specifications, it may cause the barcode display error.

2, QR Code, Date Matrix and Code_128 these three barcodes support GS1 mode, GS1 mode has a specific coding rules.

Bar code	Specific	Description
----------	----------	-------------

type	Function	
QR code		<ol style="list-style-type: none"> Adjustable text display spacing. Adjustable text is displayed to the right or Support to display 5 rows of text in GS1 (UDI) mode 
DM code		<ol style="list-style-type: none"> Like QR codes, DM codes can also adjust text spacing and text display position. Can choose the size, from 10 x 10 to 40 x 40 can choose. Support to display 5 rows of text in GS1 (UDI) mode.

5.2.6 Shift Code Editing

1、 If you want to record the rotation of each shift, that is, automatically change to the set content at the set

time, please click the button  in the "Information button area", and a default entry will appear in the "Information Editing area". As shown in Figure 5-11.

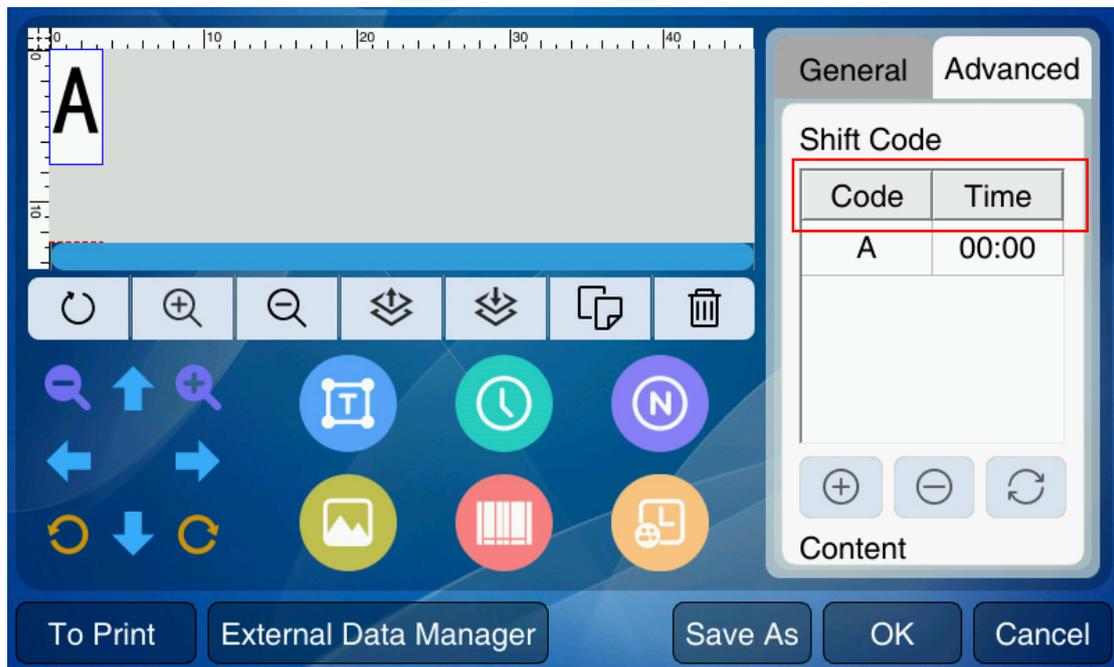


Figure 5-11 Shift code editing interface

2、 In the advanced option of "Information Properties Area", click the red box under the conversion code and enter the required information in the content box.

3、 In the general option of "Information Property Area", you can adjust the position of the shift code entry, rotation Angle and other attributes.

Item	Button	Description
------	--------	-------------

1		Add a line.
2		Delete a line.
3		To cancel the selected content.
4	Time	Sets the shift/rotation of the time.

5.3 How do I edit a print file already saved

This chapter tells how to edit the saved two ways to print documents, respectively is: 1, use the "load file" function, 2, according to the main interface of "information preview area". The following steps begin to introduce the specific operation.

5.3.1 Use the "load file" function

1、Click the button **Load File** in the main interface, and the system enters the load file interface. As shown in figure 5-12.

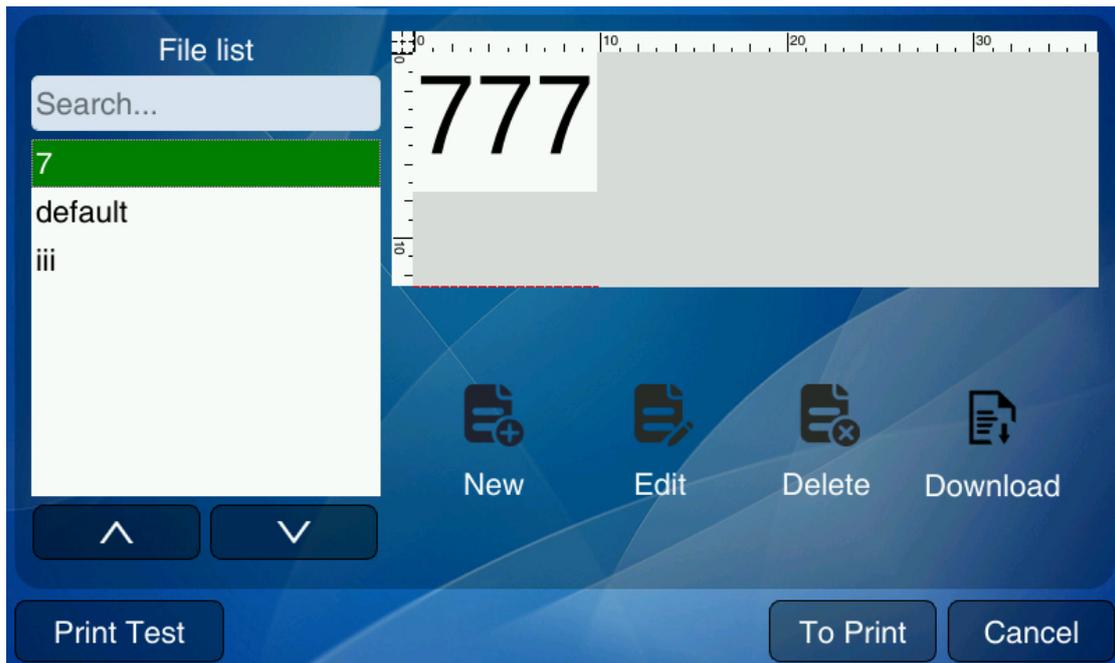


Figure 5-12 Load file interface

2、Need to edit the selected files in the file list, click on the "edit" button, the system of editing files into the interface, the information edit area according to the information content of the file.

3、Select this information to edit and modify. After the modification is complete, click the

To Print button, the system returns to the file loading interface, you can select the file for printing jobs.

5.3.2 Use the long press of "Information Preview Area"

1、On the home screen, press and hold "Information Preview Area" and tap the pop-up

button  . The page for editing files is displayed.



Figure 5-13 File editing interface

2、 You can edit and modify information in the information editing area. After the modification is complete, click  button, the system returns to the main interface, and the modified information is updated to the information preview area in the main interface. Print jobs can start directly.

5.4 How do I delete/copy file

1、 Figure 5-14 shows the page for loading files. After you select a file, click the  button. Delete the selected file.

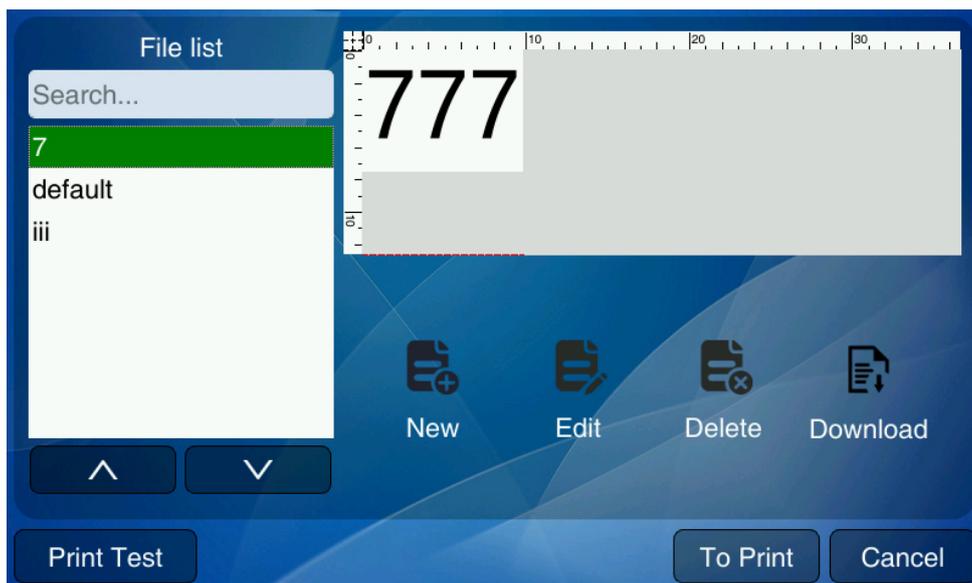


Figure 5-14 Load file interface

In addition, click  button, You can copy files. Figure 5-15 shows the page for downloading files. First,

you need to find the file you want to copy in the file directory, then click **Copy to U Disk** button or **Copy to Local** button.

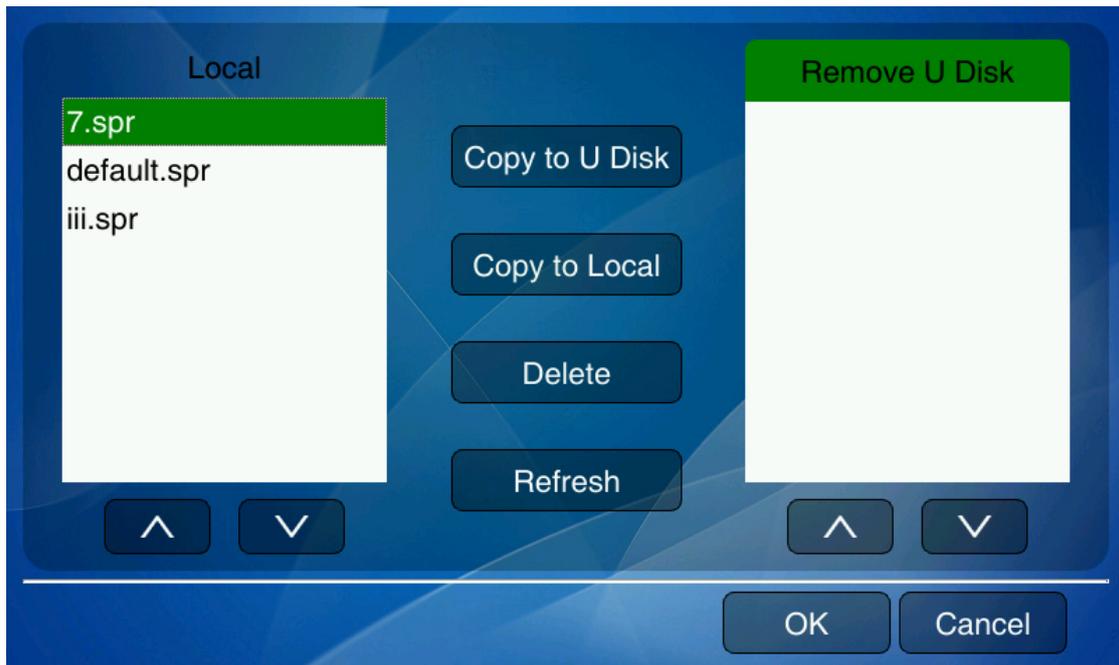


Figure 5-15 Down load file interface

Note: Added the function of removing removable disk in the interface of downloading files to improve the security of pulling out the USB flash drive and ensure the integrity of the file.

5.5 How do I edit external variable data

This chapter describes how to edit variable data information. In section 5.2, we can see that in the "Information Properties Area" advanced option of "Text Editing" and "Bar Code editing", there is a "External Data" button, click the button to turn it blue to start using the external data function.

1、Click **External Data Manager** button, The Information Property area on the right becomes the external data management page. As shown in Figure 5-16.

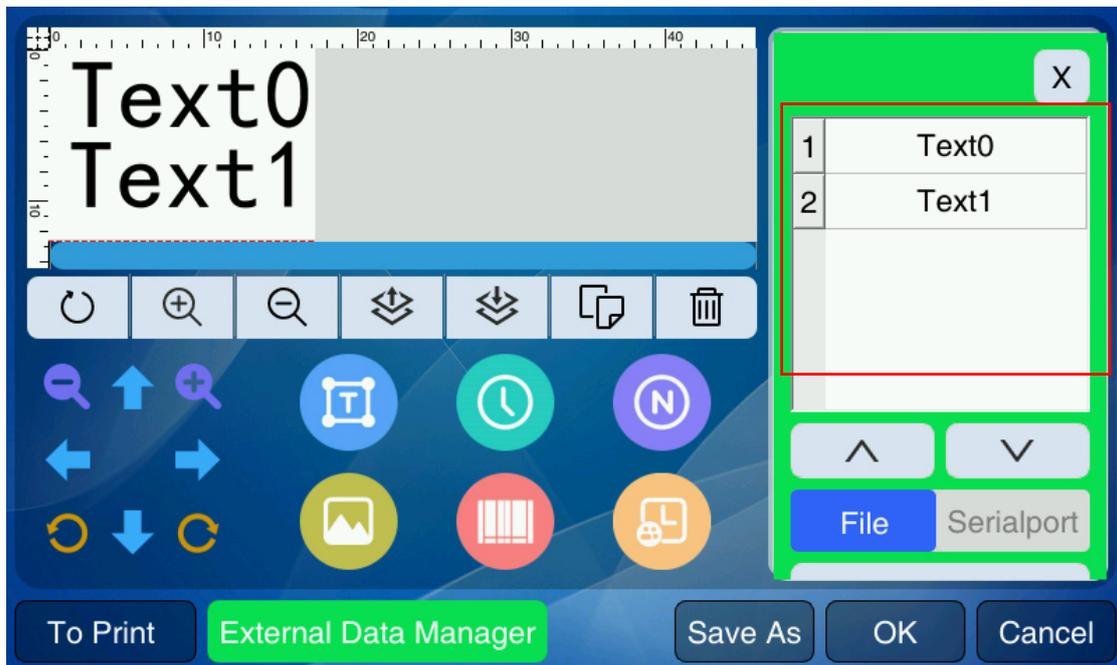


Figure 5-16 External data manage

Button	Description
^	Moves the actual print one column forward.
v	Moves the actual print one column back.

2、 The source of variable information can be either TXT text or Excel table imported through the U disk, or real-time data transmitted through the USB-B serial port.

Button	Description
File	TXT text or Excel table imported from USB flash drive.
Port	Real-time data transmitted via USB-B serial port.
Stop	When data is printed to the set end line, the device stops printing.
Repeat	When data is printed to the set end line, it starts printing again from the set start line.

3、 When selecting USB flash drive to import data , clic button , enter into preview.As figure 5-17, Select the file you want to print and clicbutton.

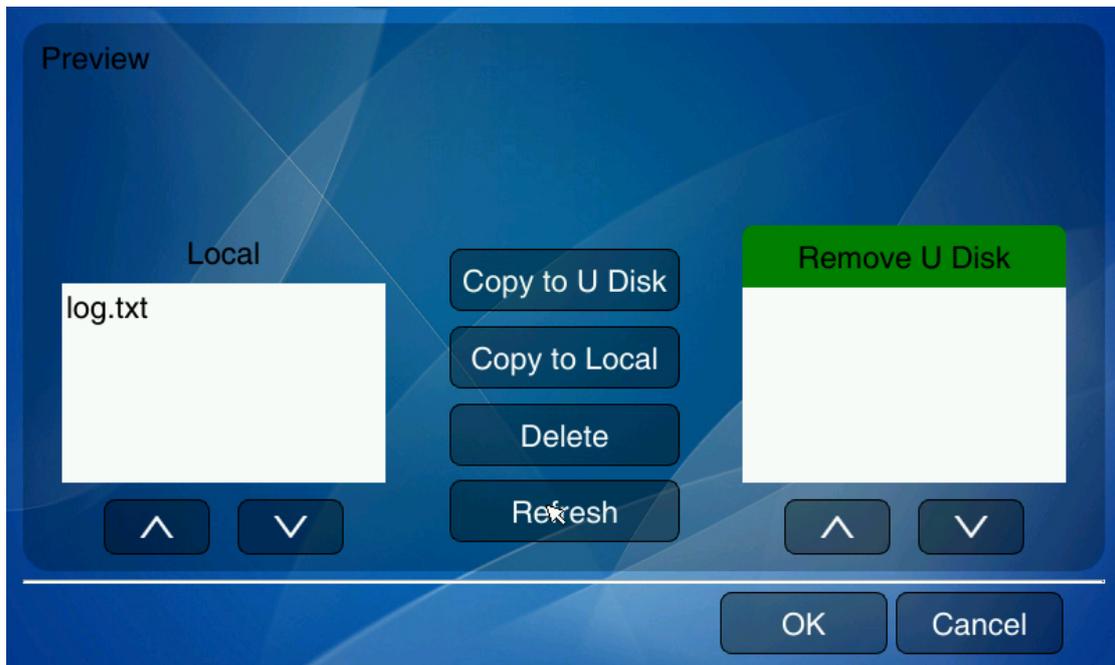


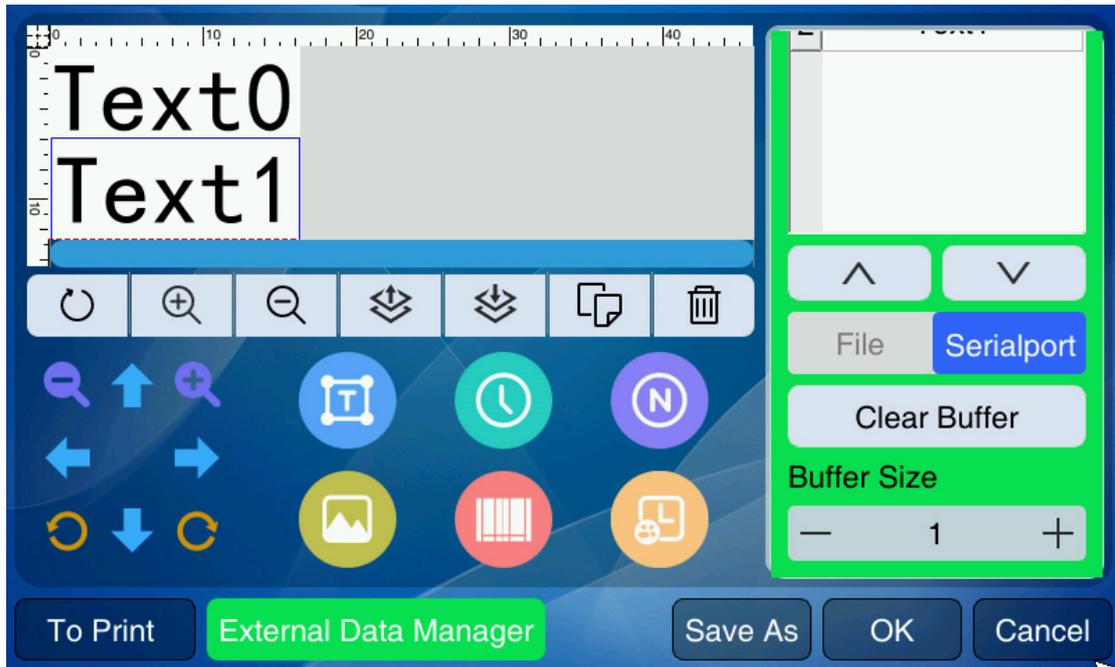
Figure 5-17 File preview interface

4、 Each load a line of data printing until the end of the file. On the page shown in Figure 5-16, set Start Line, End Line, and Current Line to be printed. After the job is complete, you can select Stop or Repeat printing.。

5、 If you print an Excel table, when the amount of information edited is less than or greater than the number of data columns in the Excel table, you can still effectively load the data. (This feature only supports Excel tables in xlsx format).

6、 Excel file on the machine for the first time to load a long time (test 10w lines, load about 17s), the software with external database caching function, during the inkjet machine power, only need to load once, after the need to load the same name of the external database file (same with txt), if the inkjet machine restart or shut down, the external database file is reloaded once upon entering the system.

7、 When select "serial port", receive external transmission of real-time data for printing. Single cache and multiple cache variable data can be printed through serial port.



Button Name	Description
Clear cache	<p>If you need to print other external data, you need to clear the cache in the device first, otherwise the cached data in the device (the last piece of data sent last time) will be printed.</p>
Cache quantity	<p>1. You can set the amount of data cache in the device. If the number of caches is set to 1, only one variable data is stored on the device. The variable data sent by the host computer will be displayed on the screen in real time (whether in print state or non-print state), and the host computer sends the variable data again, the device will still update, the current printed data content of the last variable data of the preceding computer shall prevail.</p> <p>When the number of caches is greater than or equal to 2, multiple pieces of variable data are saved on the device and printed one by one according to the sequence in which the host sends variable data. When the remaining data on the device reaches the set number of caches, the device sends a signal indicating that it is ready to send data to the device again.</p> <p>2. The device can cache up to 99 pieces of data. If the cache is completely printed and no new data is sent, the device reprints the last item until the device receives new data and the printed content is updated.</p>

If the software version is 1.0.4 or later and the serial port function is used, the communication protocol is referred to the <Online External Communication Protocol (Serial Port) v1.4.>

Chapter 6 User interface

This chapter describes the basic operations of the user interface, including the following topics:

- [Print Setting](#)
- [Counter Setting](#)

6.1 Print Setting

Click home page  button, enter into setting interface, click  save button to keep print setting parameters.



Figure 6-1 Print parameter setting

Item	Button Name	Description
1	pulse width	Used to set the print pulse width of the cartridge nozzle (according to the cartridge setting).
2	voltage	Set the working voltage of the cartridge nozzle (according to the cartridge setting).
3	time-lapse	Set the time from receipt of the trigger signal to start printing.
4	Nozzle	The HP cartridges used by the inkjet printer all contain two rows of nozzles, that

		is, left spray and right spray. When the nozzle on one side is not clear, you can choose the nozzle on the other side to print. It is recommended that you switch the "printing mode" every time you use it for a period of time to better maintain the nozzle.
5	Direction	Select the printing direction which are forward, backward, forward with reverse, backward with reverse.
6	DPI	The larger the DPI, the clearer the printed information, and the slower the printing speed.

6.2 Counter Setting

Click home page **Counter Set** button, The system enters the counter setting interface, including "counter setting" and "print times". See Figure 6-2.

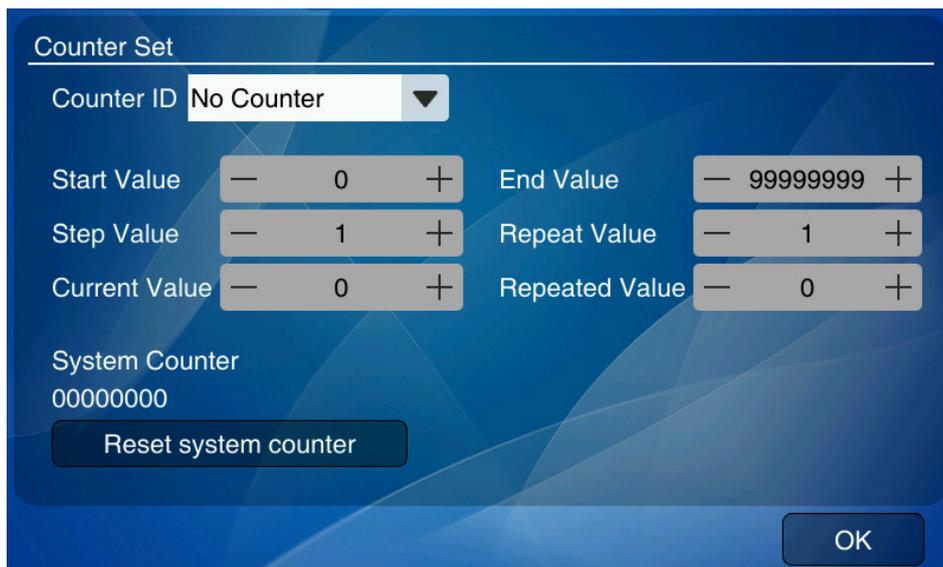


Figure 6-2 Counter Setting

Item	Button Name	Description
1	Start value, end value	The starting and ending values define the range of the counter. When the counter is added to the end value, it is automatically printed back to the start value.
2	Step value	The counter increases the cumulative value once and can be set as negative.

3	times of repetition	Set the times of data that need to be re-printed.
4	current value	The value of the counter to print currently.
5	Reset print count	Reset the print count of the main screen, make the print count zero.

6.3.1 Down counter

The reverse sequence number can be printed. Example: The current value is set to 100, the end value is set to 0, and the step value is set to -1, that is, the device starts printing from 100, and then 100, 99, 98..... 0, if the starting value is set to 100, the print will start from 100 again, and then the cycle print will be repeated.

Attachment 1

About Custom dates

d	Date numbers without leading zeros (1 to 31)
dd	Date number with leading zero (01 to 31)
ddd	Abbreviated week names (e.g. "Mon" to "Sun")
dddd	The full name of the week (e.g. "Monday" to "Sunday")
M	Month number without leading zeros (1-12)
MM	Month number with leading zero (01-12)
MMM	Abbreviated month names (e.g. "Jan" to "Dec")
MMMM	Full month name (e.g. "January" to "December")
yy	Two-digit year (00-99)
yyyy	Four-digit year

h	Hours without leading zeros (0 to 23, or 1 to 12 if displayed in AM/PM)
hh	Hour with leading zero (00 to 23, or 01 to 12 if displayed in AM/PM)
H	Hours without leading zeros (0 to 23, that is, displayed using AM/PM)
HH	Hour with a leading zero (00 to 23, that is, displayed using AM/PM)
m	Minutes without leading zeros (0 to 59)
mm	Minutes with leading zeros (00 to 59)
s	Whole seconds without leading zeros (0 to 59)
ss	Whole seconds with leading zeros when applicable (00 to 59)
AP /ap /A /a	Interpreted as AM/PM time. The AP must be either "AM" or "PM", _Letters can be either uppercase or lowercase.
JD	Displays the day of the year
JW	Displays the week of the year

Customize date formats

ND	NN	NO
Sun	01	A
Mon	02	B
Tue	03	C
Wed	04	D
Thu	05	E
Fri	06	F
Sat	07	G