ANSER

User Manual

A1 Thermal Inkjet Printer

Version 1.0, April 12, 2023

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Revision History

Version	Date	Modification
1.0	2023/4/12	External release

1 A1 User Interface

This document describes setting and configuration of ANSER A1 Thermal Inkjet Printer. How to set printing message, how to set printhead, how to setup production line, and how to troubleshoot are all included. Please see the following figure for menu tree and main functions of A1 printer.

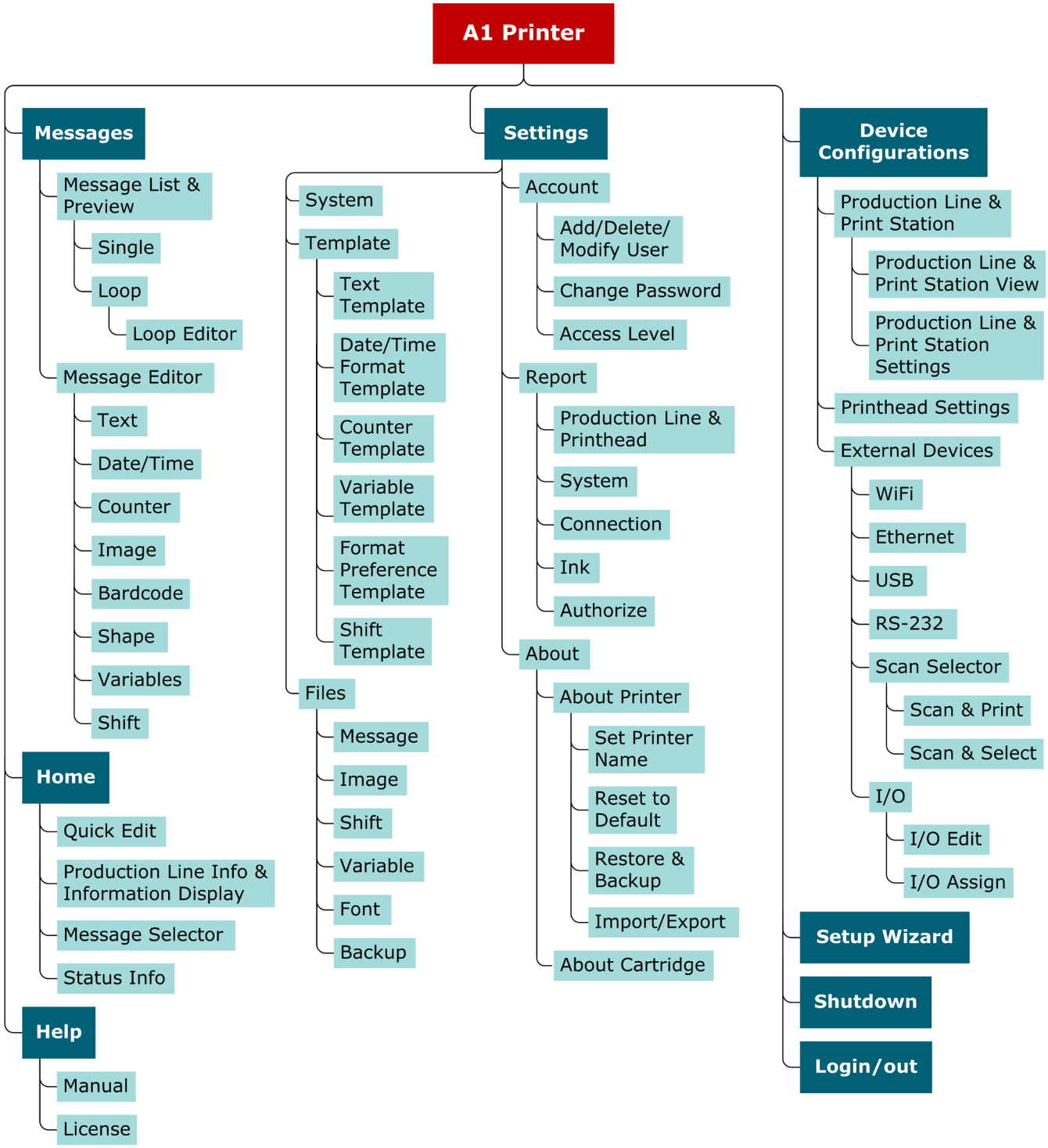


Figure 1-1. A1 Printer Manu Tree

1.1 Getting Started with A1 User Interface

The following information is described:

- Initial Setup.
- Getting to know the homepage.
- Getting to know the message editor.
- Getting to know the device settings.
- Getting to know the settings page.

1.2 A1 Wizard Setup

Upon powering up A1 for the first time, the system will prompt a login page (see **Figure 1-2** below) where users can set up an administrator account. Users can also import settings directly from another A1 printer using a USB drive.

Press **Set Password** to create the admin account; press **Import** and connect a USB drive with backup files to restore A1 printer settings; press the globe icon in the lower right corner "🌐" to select a language.

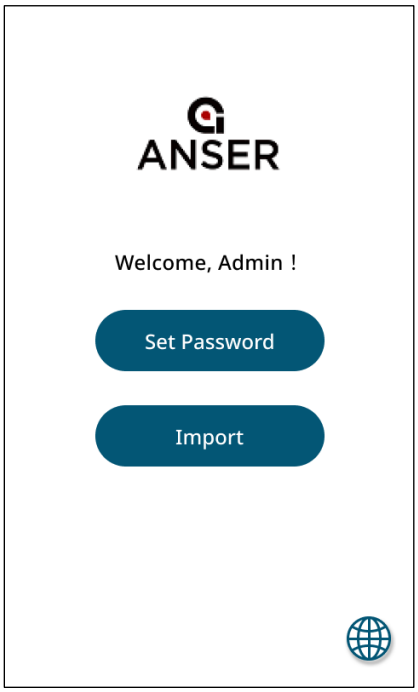


Figure 1-2. A1 System Login Page

After creating the admin account, the A1 wizard will guide you to configure the system date time and the necessary settings to start A1, as seen in the following figure. Press the drop-down buttons "⊡" in **Time Zone** to select the area and the city you are at.

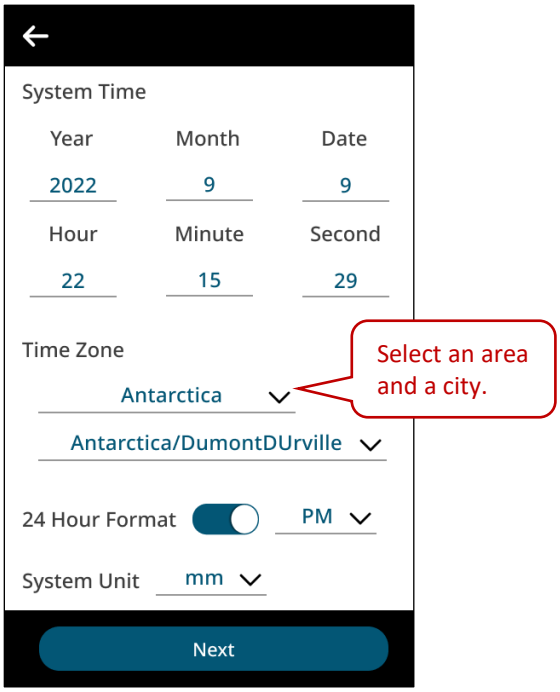


Figure 1-3. Initial Setup – System Time

Click **Next** and **OK** to complete more initial settings following A1 Wizard.

1.2.1 Create a Production Line

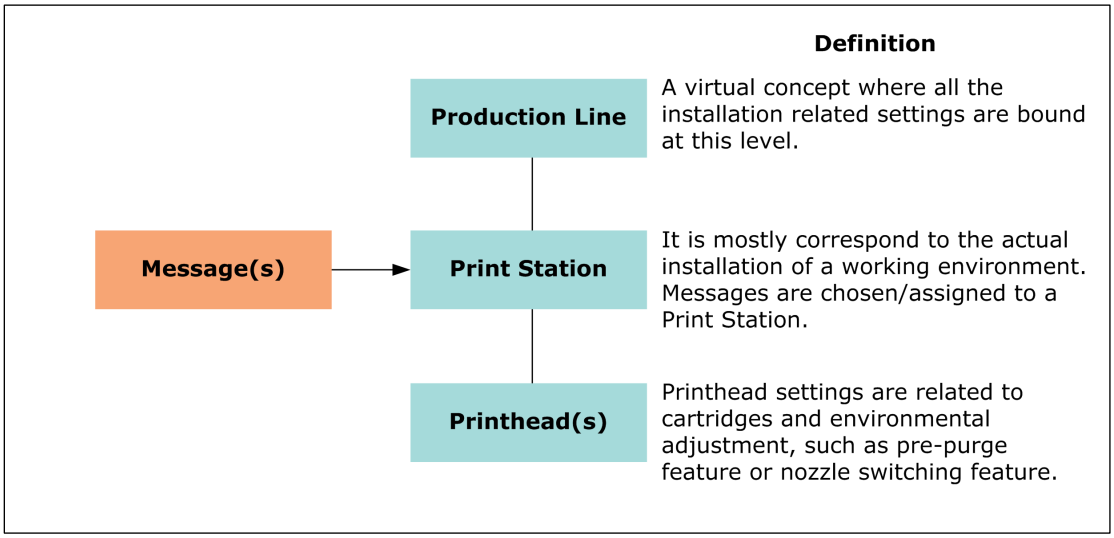


Figure 1-4. A1 Printing Setup Diagram

1.2.2 Production Line Settings

STEP 1: Enter a name for your production line and set encoder speed. Please refer to **Section 1.5.1** for detailed settings.

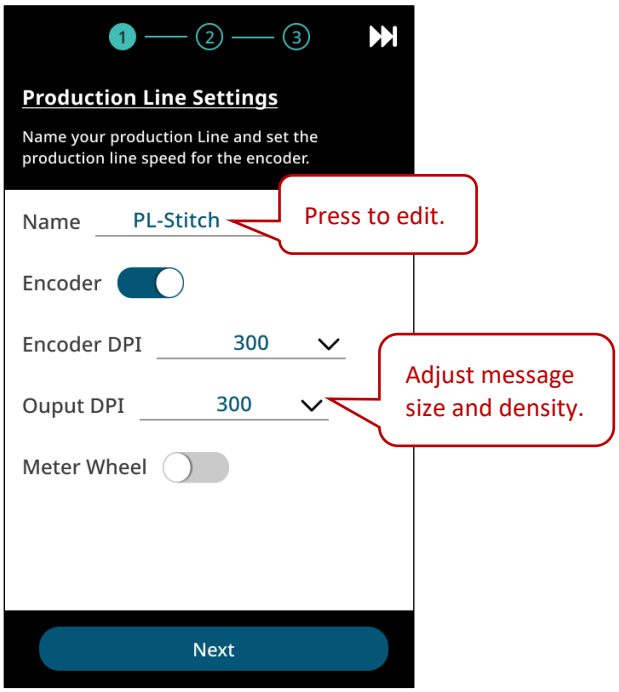


Figure 1-5. Initial Setup – Production Line Settings (1)

STEP 2: Press buttons "▯" or "▯▯" to select Single or Stitch printing mode.

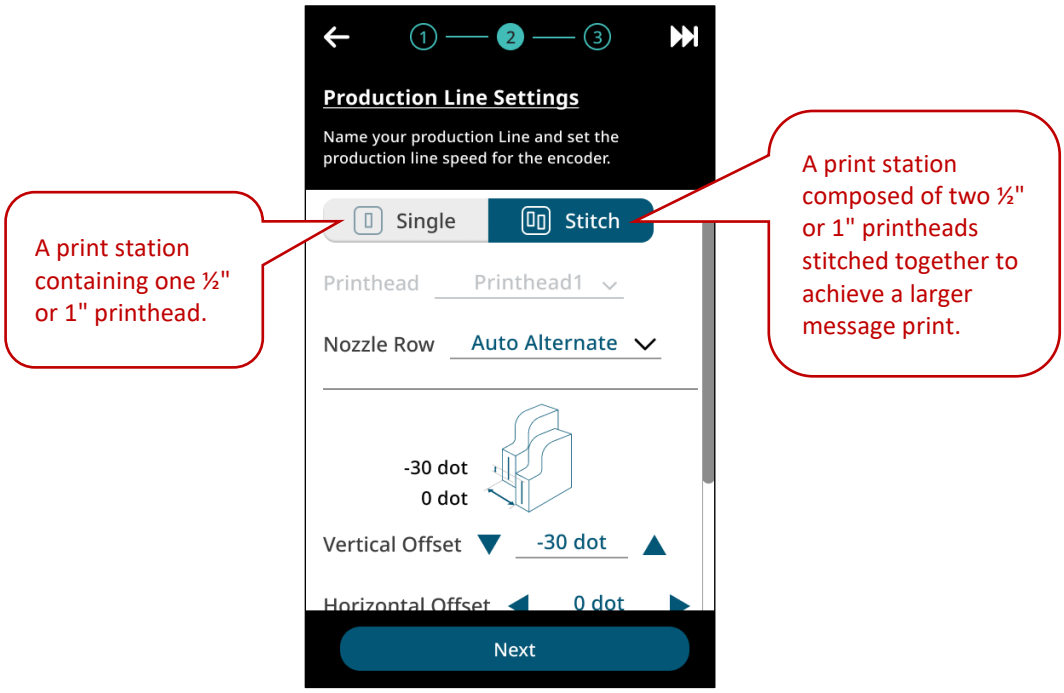


Figure 1-6. Initial Setup – Production Line Settings (2)

Table 1-1. Options in Production Line Settings (2)

Option	Description
Printhead	Select which printhead to be used. Gray out in Stitch mode.
Nozzle Row	Select working mode of nozzle row: Auto Alternate, Left, Right, or HD
Vertical / Horizontal Offset	Fine tune prints when Stitch printheads are already physically aligned (for Stitch mode only).
Photocell Source	Set the sensor signal coming from the **Internal** or the **External** device.
Photocell Mode	Select **Normal** or **Inverted** mode of a photocell. **Normal Mode:** Trigger photocell when the sensor detects an object (High-to-Low signals). **Inverted Mode:** Trigger photocell when the sensor detects no object (Low-to-High signals).
Print Direction	Set according to your products' moving direction when they passing in front of the print station. View angle is from the back of A1.
Print Upside Down	Set all messages to be printed in upside down orientation or not.

Option	Description
Station Delay	The distance (unit: mm or inch) from the sensor trigger to the location on the product where the print starts. Please refer to **Figure 1-47** for more details.
Trigger Block	Set a distance to temporarily disable sensor trigger from ink firing and printing.

STEP 3: The last step in the initial setup wizard is to create a message to be printed thru one of the following three methods: Create Message, Select from Template, or Import File.

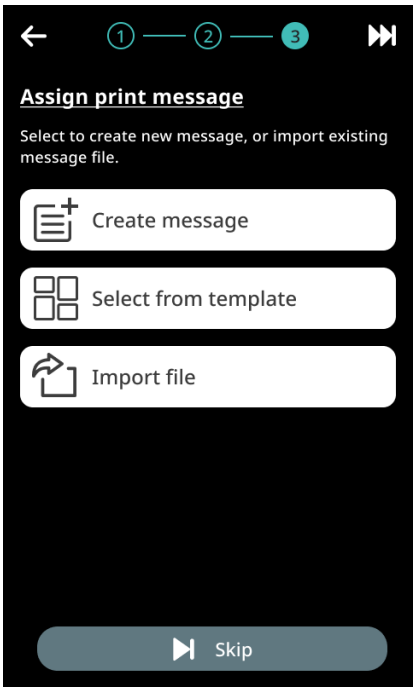


Figure 1-7. Initial Setup – Production Line Settings (3)

1.2.2.1 Assign Print Message

Create Message

STEP 1: Press **Create Message** and set message property. Press **OK** and enter **Message Editor**.

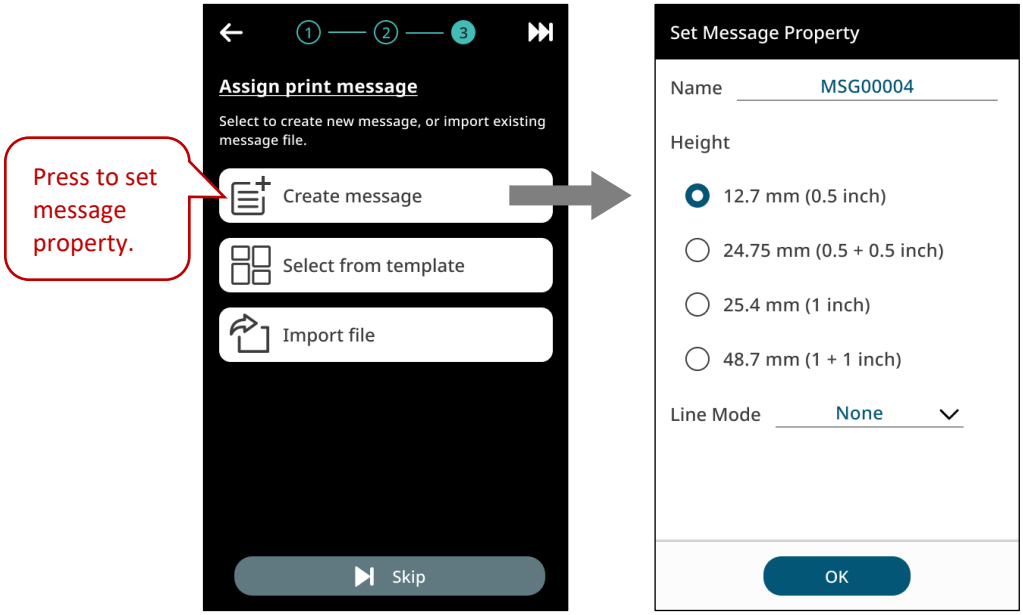


Figure 1-8. Initial Setup – Create Message (1)

STEP 2: In Message Editor, hit **Add Object** " " to insert desired objects. Please refer to **Section 1.4.1** for detailed operations.

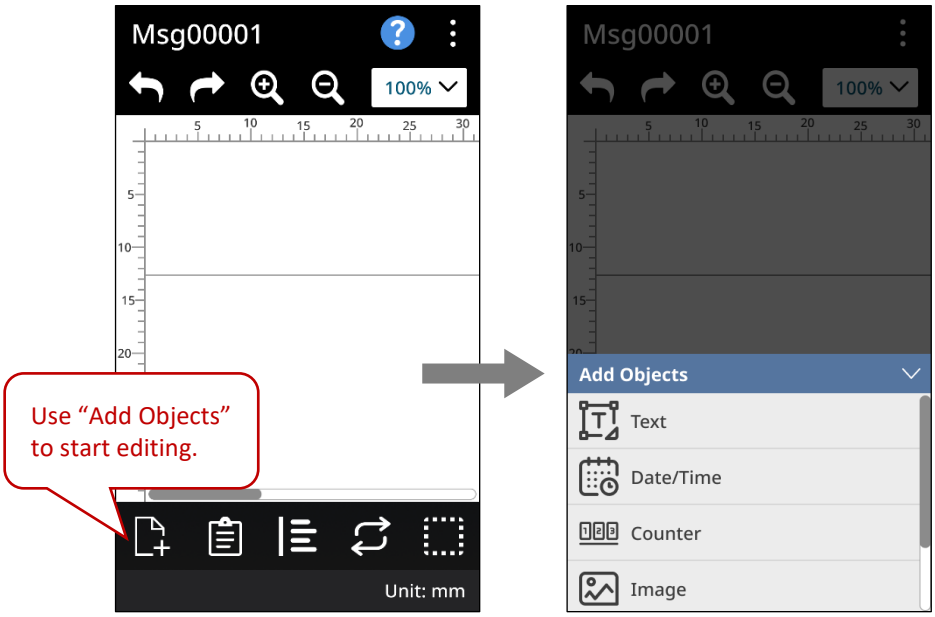


Figure 1-9. Initial Setup – Create Message (2)

STEP 3: Once your message is saved, production line is ready. Press **OK** and start printing.

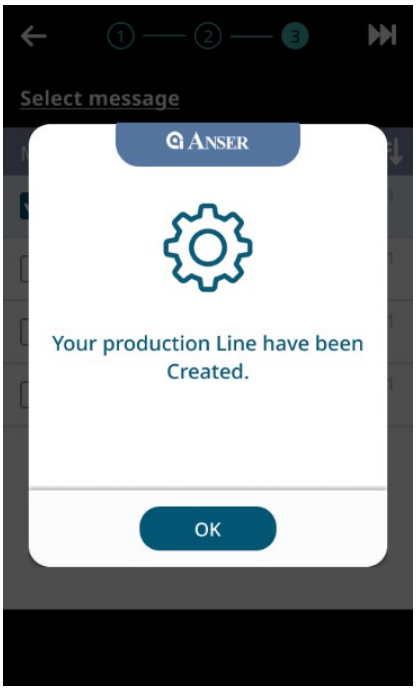
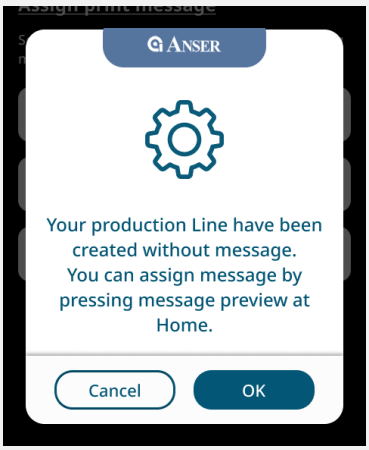
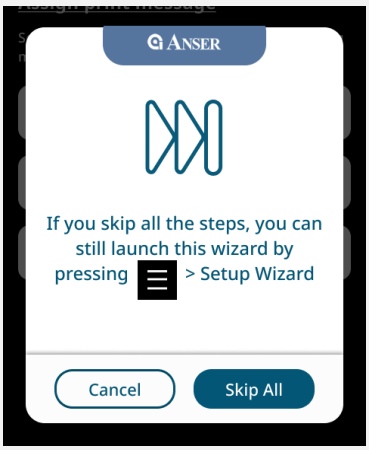


Figure 1-10. Initial Setup – Create Message (3)

Note: 1. If no message is created or saved, a notification will show. press **OK** and create message later.



2. Skip steps for now and use **Menu "☰" > Wizard "⧉"** to go back later.



3. Close A1 dust cover before hitting the **Start "▶"** botton to ensure that cartridge latch remains closed.

Select from Template

STEP 1: Press **Select from Template** and select Message Height, Language, and Objects of your message. Press **Next**.

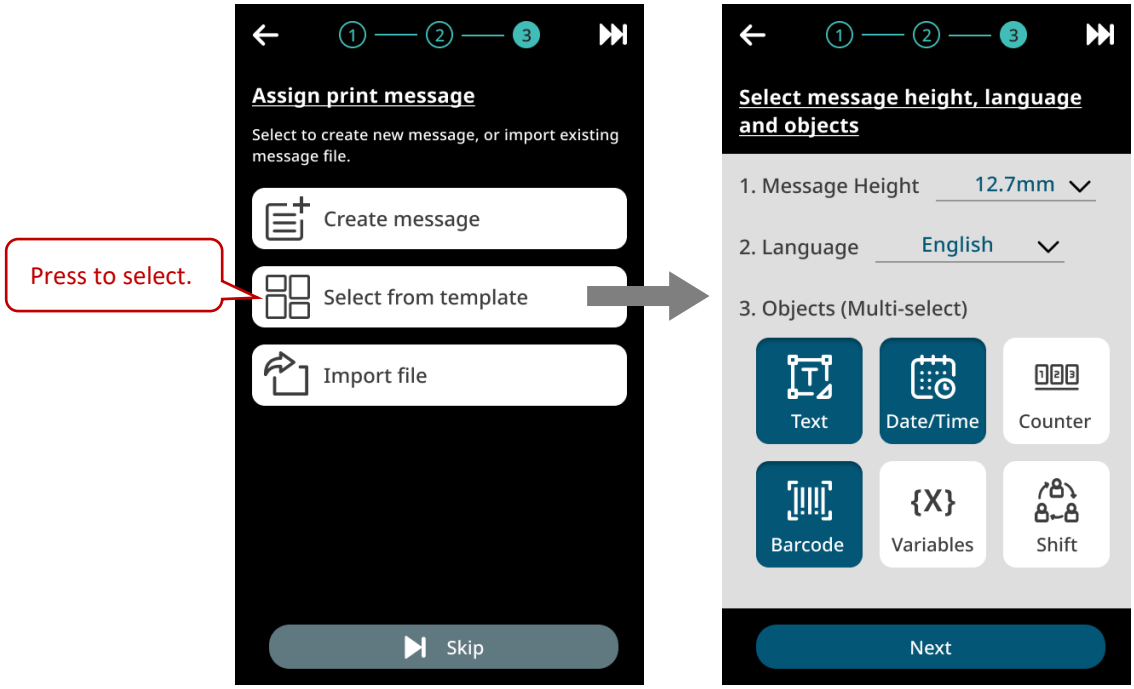


Figure 1-11. Initial Setup – Select from Template (1)

STEP 2: Roll and choose a template with selected objects. Press **Next** to go to Message Editor.

Figure 1-12. Initial Setup – Select from Template (2)

STEP 3: In Message Editor, use tool bar to adjust objects and message settings. Please see **Section 1.4.1** for more details.

Figure 1-13. Initial Setup – Select from Template (3)

STEP 4: After saving the edited message, a notification appears as the following **Figure 1-14** shows. Press **OK** to start printing.

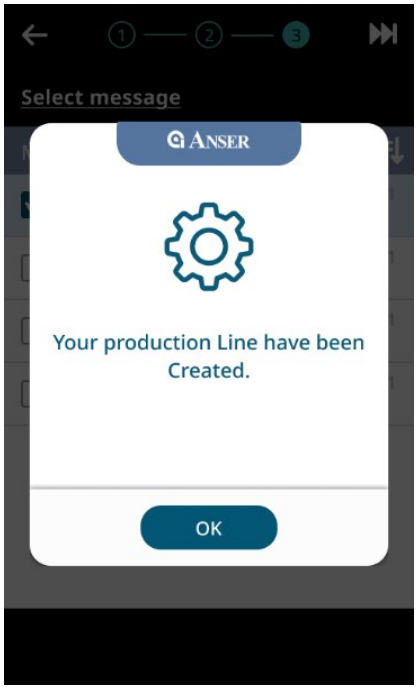


Figure 1-14. Initial Setup – Select from Template (4)

> **Note:** Close A1 dust cover before hitting the **Start "** ▶ **"** botton to ensure that cartridge latch remains closed.

Import File

STEP 1: Connect a USB and press **Import File** to choose messages stored in it.

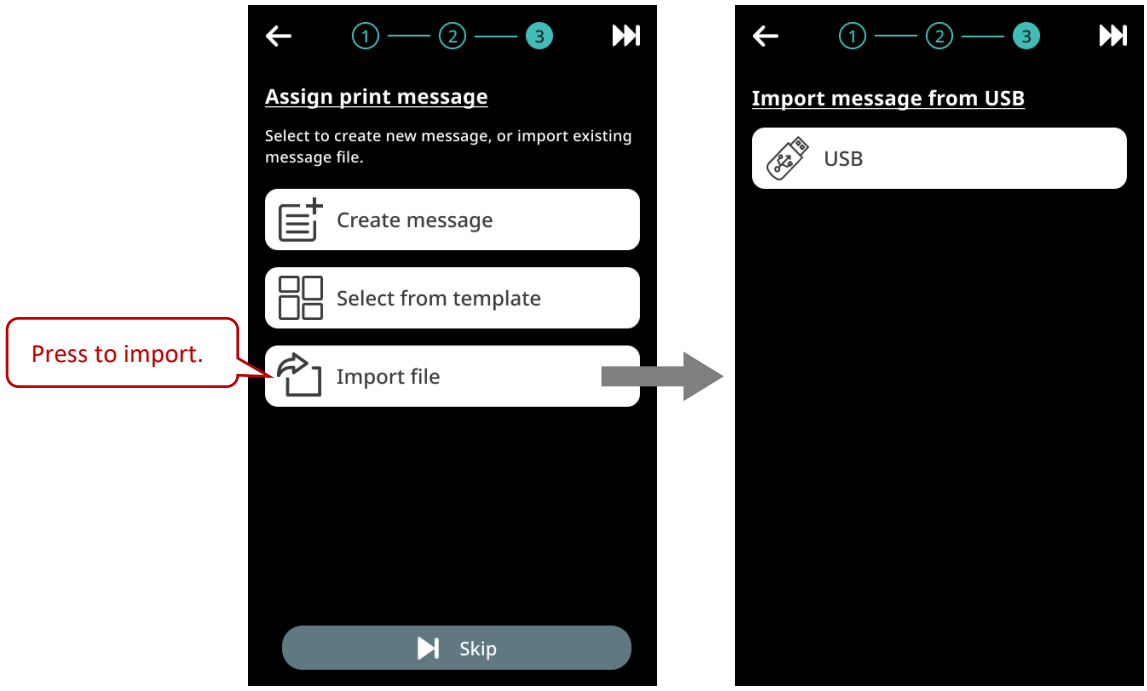


Figure 1-15. Initial Setup – Import File (1)

STEP 2: Double-click the folder previously stored and select a desired message. Press **Next** to complete the settings.

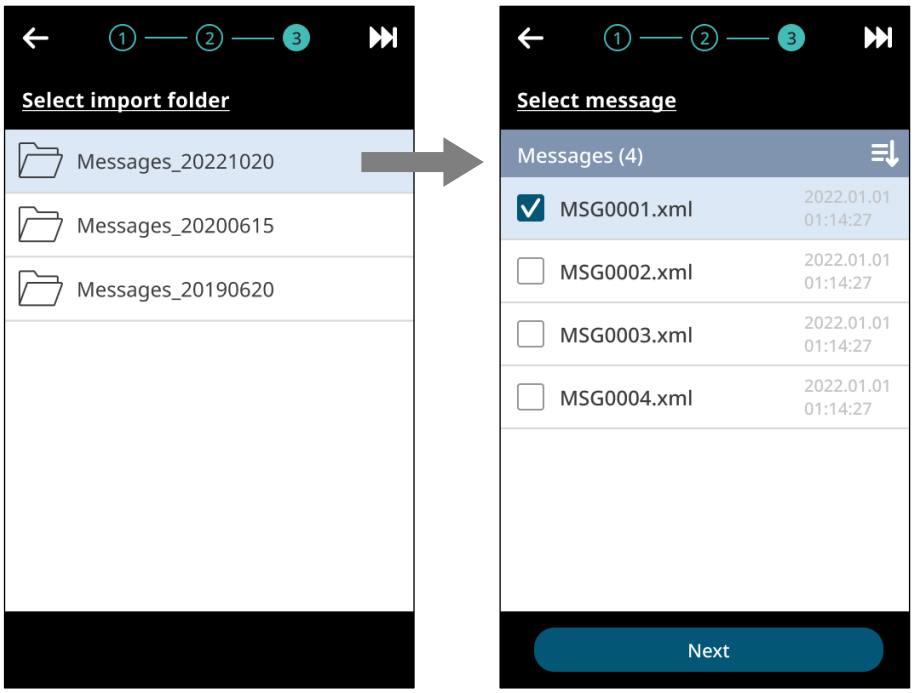


Figure 1-16. Initial Setup – Import File (2)

STEP 3: Press **OK** and start printing.

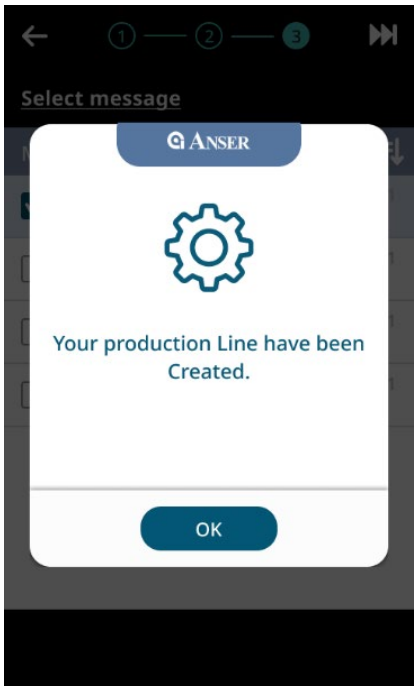


Figure 1-17. Initial Setup – Import File (3)

Note: 1. Close A1 dust cover before hitting the **Start "** **"** botton to ensure that cartridge latch remains closed.

2. If you'd like to edit message after importing from USB, press "" in homepage. Please see **Section 1.3** or **Table 1-2** for more details.

1.3 Getting to Know the Homepage

The A1 system homepage provides essential information about the status of the production line, print station, and printhead(s), where users can quickly know what is happening through all these components. Each part of A1 system homepage is marked by a red number in **Figure 1-18** below and is described in the following **Table 1-2**.

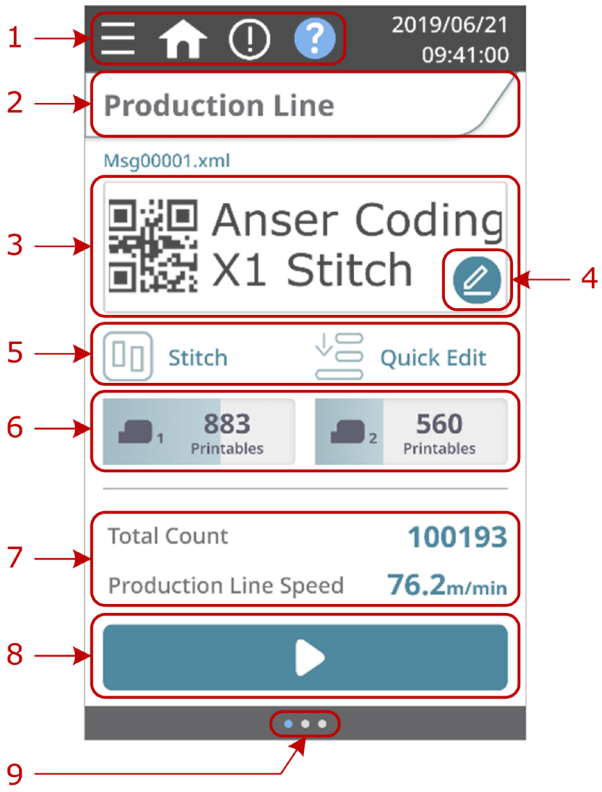
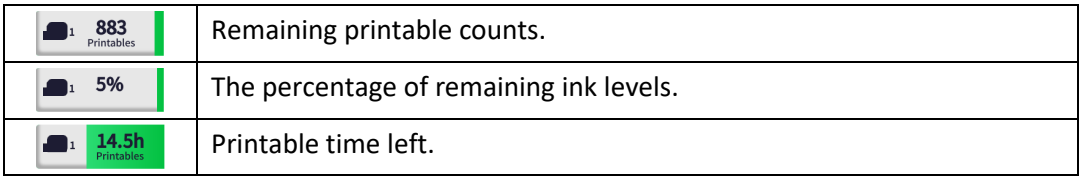


Figure 1-18. A1 System Homepage

> **Note:** Close A1 dust cover before hitting the **Start "** ▶ **"** botton to ensure that cartridge latch remains closed.

Table 1-2. A1 System Homepage Settings

<table>
<tr><th>Item</th><th>Icon</th><th>Description</th></tr>
<tr><td rowspan="5">1</td><td> </td><td>Menu Tree Button: Access system home page and A1 settings: Messages, Select Messages, Setup Wizard, Device Configuration, Settings, Help, Shutdown and Log Out.<table><tr><td> </td><td>Shutdown: Perform a soft shutdown of the system before directly pressing power off button of A1 printer.</td></tr><tr><td> </td><td>Log Out: Log out from current user account, and back to log-in page.</td></tr></table></td></tr>
<tr><td> </td><td>Home Button: Return to the homepage as shown in Figure 1-18.</td></tr>
<tr><td> </td><td>Status Info Button: Access system status information. Show the number of disconnection in the following statuses.<table><tr><td>0/1</td><td>Scan & Print: Display the Number of Scan for Scan & Print. Press the button and see the content of the number of scans done and stored in the variable fields.</td></tr><tr><td> </td><td>Ink Cartridge Status / Button: Show ink cartridge status. Red icon means not all cartridges are connected, white means both cartridges connected. Press to see more setting and information.</td></tr><tr><td> </td><td>WiFi Status / Button: Show WiFi connection status. A USB-to-WiFi dongle is required. Red icon means no connection, white means connected. Press to see more setting and information.</td></tr><tr><td> </td><td>Ethernet Status / Button: Show Ethernet connection status. Red icon means no connection, white means connected. Press to see more setting and information.</td></tr><tr><td> </td><td>USB Status / Button: Show USB connection status. Red icon means no connection, white means connected.</td></tr></table></td></tr>
<tr><td> </td><td>Help Button: Introduce main functions and their quick access buttons in the main page.</td></tr>
<tr><td>2</td><td> </td><td>Production Line Settings Button: Press it to access the current production line settings page.</td></tr>
<tr><td>3</td><td> </td><td>Message Selector: Show message preview. Press to access Message Selector.</td></tr>
<tr><td>4</td><td> </td><td>Edit Message: Press it to enter A1 Message Editor. Please refer to Figure 1-19 and Table 1-3.</td></tr>
<tr><td rowspan="3">5</td><td> </td><td>Print Station Single Mode: Press to access Production Line & Print Station Settings page.</td></tr>
<tr><td> </td><td>Print Station Stitch Mode: Press to access Production Line & Print Station Settings page.</td></tr>
<tr><td> </td><td>Quick Edit Button: Press to adjust parameters while the printer is printing: General, Counter, Variable Input, Database, Repeat Print, and Stitch.</td></tr>
</table>

Item	Icon	Description
6		**Ink Cartridge Information:** Shows cartridge statuses. The icon is colored if a printhead is connected, otherwise it grays out. The color of cartridge icon " " changes accordingly. Press to enter **Printhead Settings** page and set Pre-Purge and Cartridge Idle Alert.
7		**Information Display Area:** It shows information about printing statistics such as Total Count, Printables, Time Elapsed, etc. Press to enter **Production Line Information** page, and hit **Information Display** " " to see more parameters to be shown. Select up to 3 parameters.  Use **Print Preview** " " to change message unit: mm, inch, or pixel.
8		**Print Start/Stop Button:** To start or stop printing. If no ink cartridge is installed, the button grays out.
9		**Production Line Page Select:** Show the total number of production line and the current page is highlighted in blue. Press the dot to go to a particular production line page.

1.4 Getting to Know the Message Editor

A1 allows intuitively message creating and editing operation. The A1 Message Editor offers the necessary tools to make message editing a more straightforward process. In A1 homepage, press **Edit Message "** **"** to enter Message Editor. Each button is marked by a red circle in **Figure 1-19** below and is described in the following **Table 1-3**.

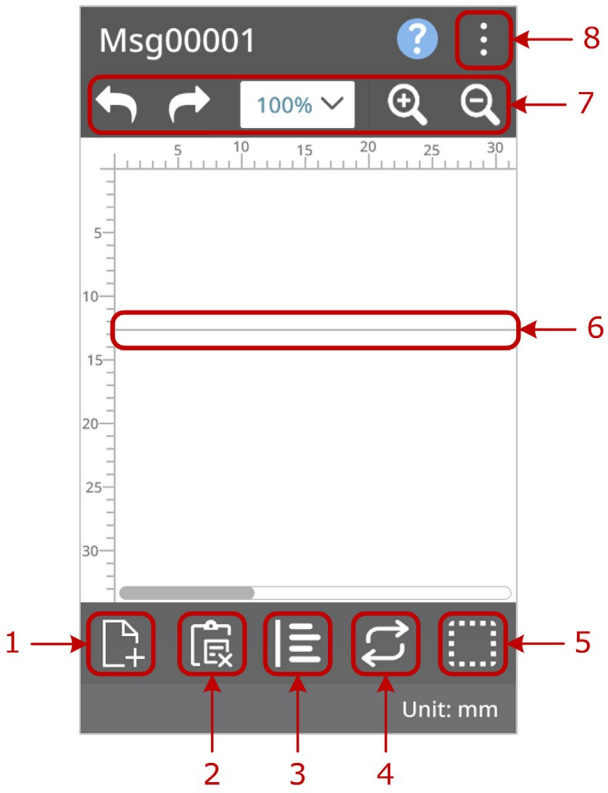


Figure 1-19. A1 Message Editor Page

Table 1-3. A1 Message Editor and Settings

Item	Icon	Description
1		**Add Object Button:** Using it to create a message is highly recommended. It contains the most commonly used objects: Text, Date/Time, Counter, Image, Barcode, Shape, Variables, and Shift. Press each object to go to further settings.
2		**Clipboard:** To copy, paste, delete objects and fine tune their positions.
3		**Alignment:** To align objects in different directions and distributions.
4		**Rotation:** It allows users to set the orientation of objects: Mirrored, Upside down, or Reverse color.
5		**Select:** To single select, select all, unselect all, or multiple select objects.
6		**Printing Border:** Mark the height and the printable area of a message.
7		**Undo:** To cancel or reverse the last action.
		Redo: To restore and repeat the action that has just been undone.
		Zoom Ratio: Select a zoom rate to view the editing area.
		Zoom In: View the editing area in a closer and bigger look.
		Zoom Out: View the editing area in a smaller and farther away look.
8		**More Settings:** Access Message Settings, Print Preview, Save/Save As File and Exit.

1.4.1 Adding Message Objects

In A1 Message Editor, using **Add Object "** **"** button to start message editing is highly recommended. Press to go to the Add Object page and eight types of often-used object as the following figure shows. Please refer to the following sections for step-by-step instructions of adding objects into a message.

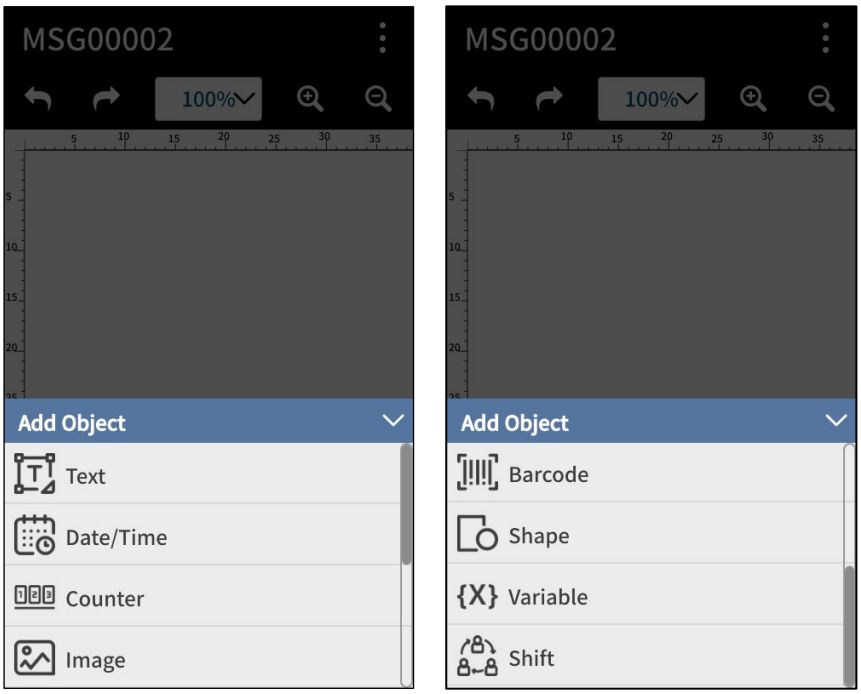


Figure 1-20. Add Eight Types of Object

1.4.1.1 Add Object: Text

STEP 1: In Add Object page, press **Text "** Text **"** and the following page will show. Use buttons below to create a template "+", to edit selected template "✎", or to delete a text template "🗑". After editing your text template, press **OK**.

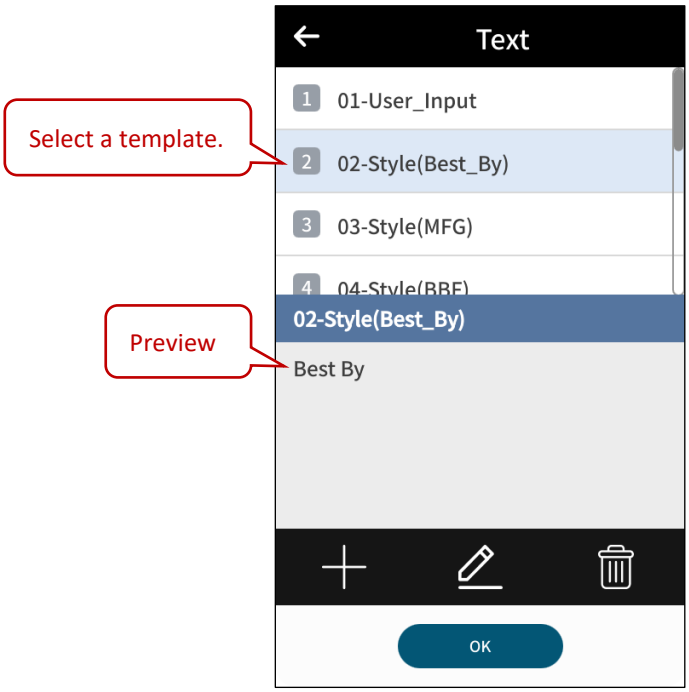


Figure 1-21. Add Object – Select a Text Template

STEP 2: When editing a text template, use a pop-up keyboard to key-in names and customized content. Press Enter " " or Hide Keyboard " " to finish key-in. Press **Save** to store your editing.

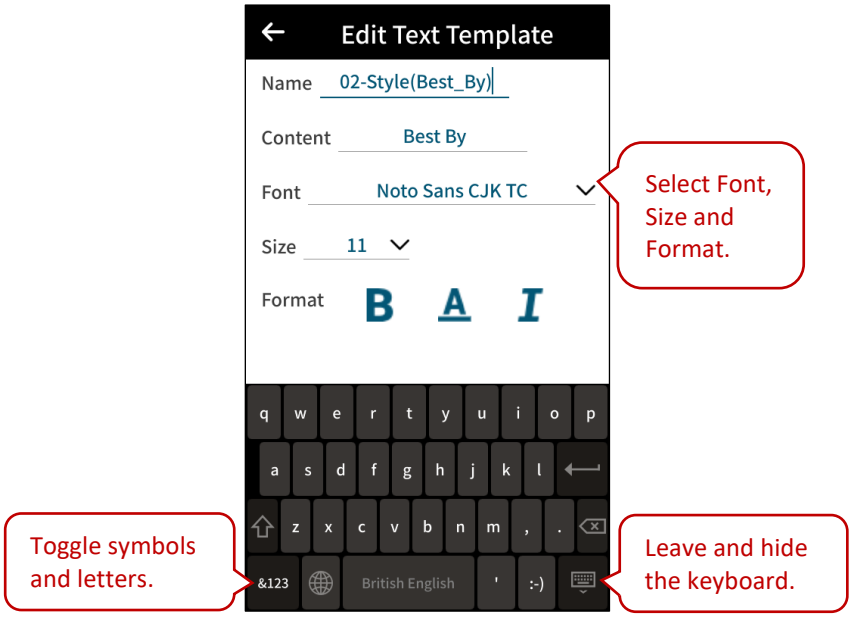


Figure 1-22. Add Object – Edit a Text

STEP 3: After pressing **OK**, a text is added and shown in Message Editor. Double-click on the selected text (marked in blue) to enter Text Settings page.

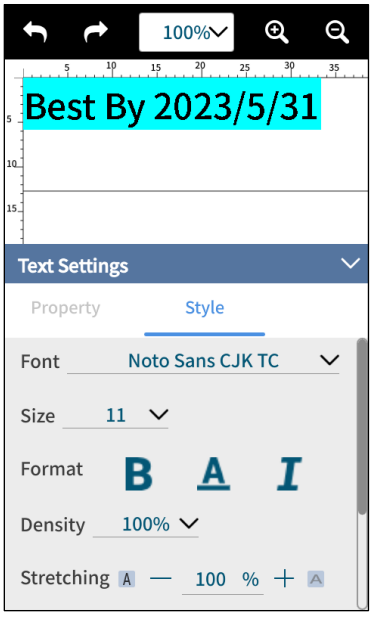


Figure 1-23. Add Object – Text Settings

STEP 4: In the Text Settings page, different styles are provided including **Density**, **Stretching** and **Spacing**. Various layouts can be done and ink usage can be adjusted accordingly. Please refer to the following figure for illustration.

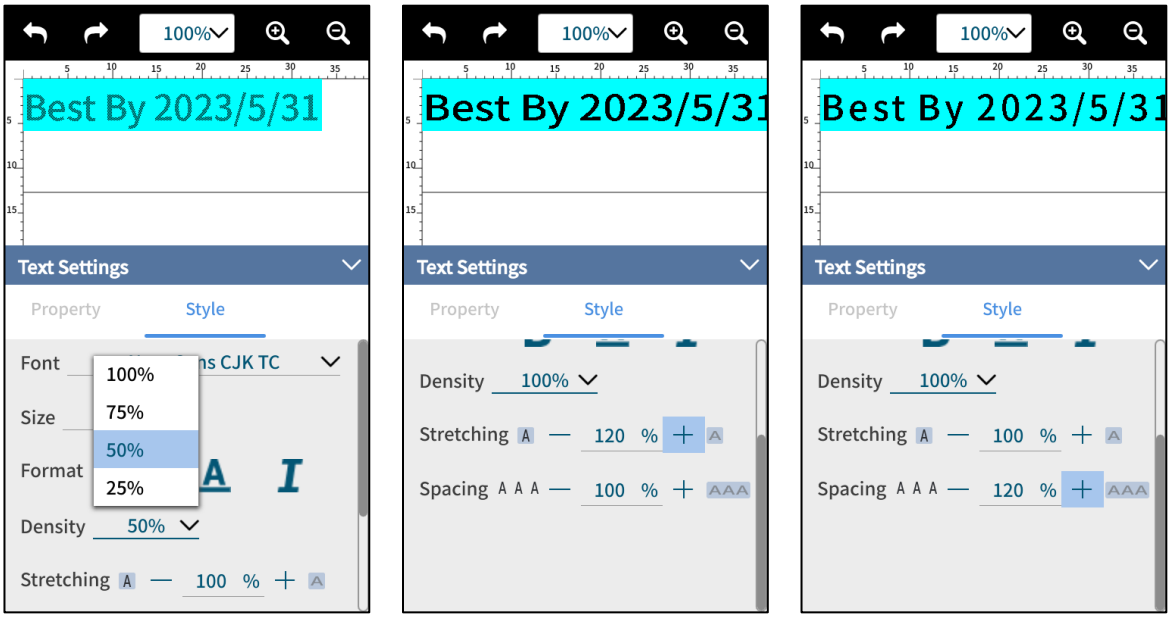


Figure 1-24. Add Object – Edit Text Styles

Note: 1. The direction of stretching is the same as reading direction. Thus, in a 90-degree angled English text, stretching over 100% will go down vertically instead of up.

2. Press **Rotation "** **"** in the edit tool bar to key in the desired angle of a selected text/object.

1.4.1.1.1 Adjust Size and Position

If the size of a text or an object is too big that it goes across print area, a red warning sign "(!)" appears to remind that a part of the message will not be printed out. A printable message height is based on the type of printhead used. For a ½" printhead, the maximum height is half inch. Double-click on a selected object to adjust its size.

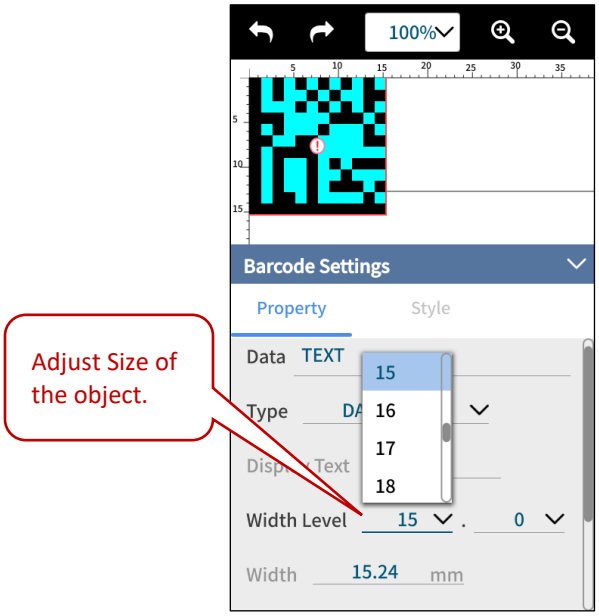


Figure 1-25. Add Object – Adjust Object Size

And if the physical print area allows, use **More Settings "⋮" > Settings "⚙"** to adjust message height, as the following figure shows.

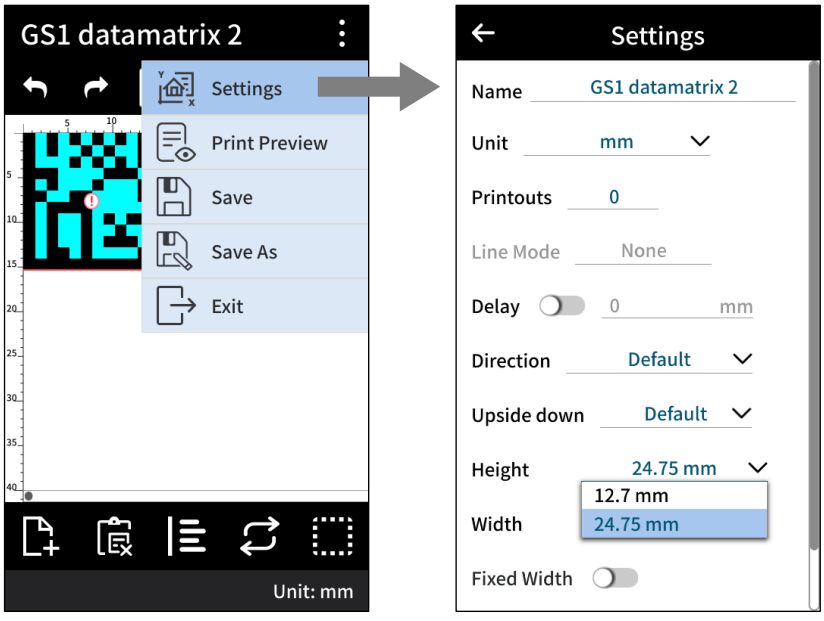


Figure 1-26. Add Object – Adjust Message Height

Press and hold on a text/object to change its position. A pair of horizontal or vertical arrows will show moving direction.

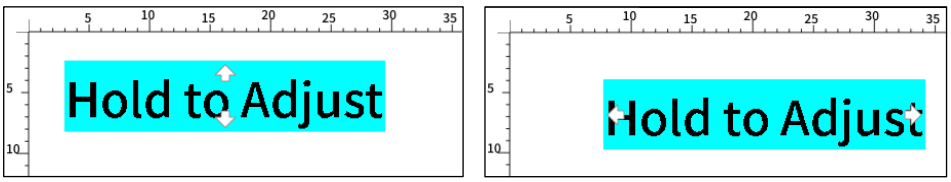


Figure 1-27. Add Object – Hold to Adjust Position

Or use **Clipboard "** **"** at the bottom tool bar to adjust or key-in the desired position of selected object.

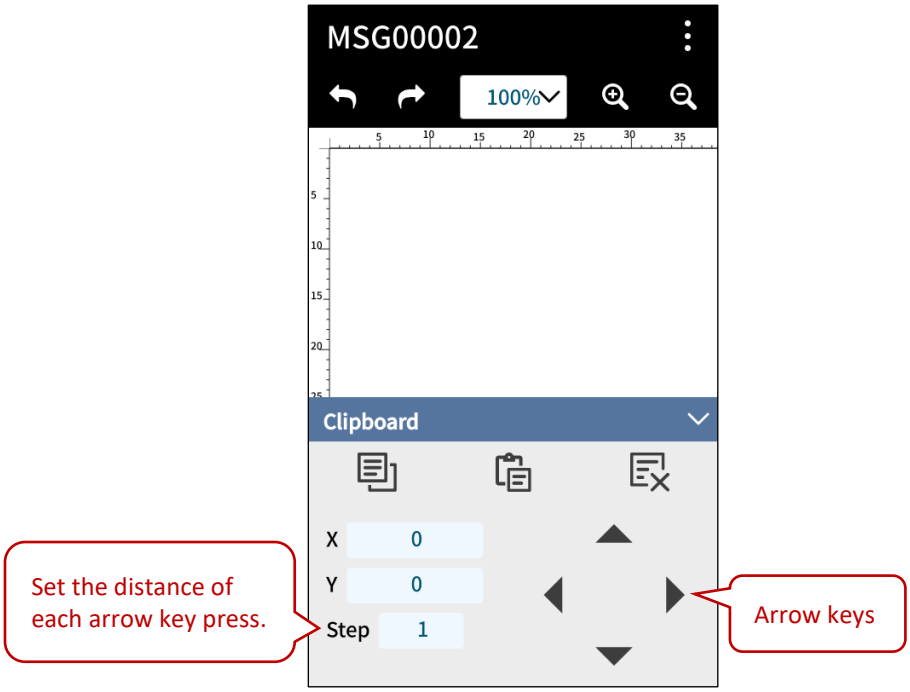


Figure 1-28. Add Object – Adjust Position in Clipboard

1.4.1.1.2 Font and Language Supported

A1 Message Editor provides eleven fonts and thirty-three system languages. Please see the following tables for details.

Table 1-4. A1 Fonts Supported

Font Type	Example
Amiri-Regular	ANSER 1234567890
Arimo-Regular	ANSER 1234567890
DejaVuSans	ANSER 1234567890
NotoSans-Regular	ANSER 1234567890
NotoSansCJKtc-Medium (Default)	ANSER 1234567890
NotoSansJP-Regular	ANSER 1234567890
NotoSansKR-Regular	ANSER 1234567890
NotoSansTC-Regular	ANSER 1234567890
OCR-B	ANSER 1234567890
OpenSans-Regular	ANSER 1234567890
Sarabun-Regular	ANSER 1234567890

Table 1-5. A1 System Languages and Virtual Keyboards Supported

Language	English Translation	System Language	Virtual Keyboard
لْعَرَبِيَّةُ	Arabic	✔	✔
Български	Bulgarian	✔	✔
Српски	Serbian	✔	✔
Čeština	Czech	✔	✔
Dansk	Danish	-	✔
Deutsch	German	✔	✔
Eesti	Estonia	-	✔
Ελληνικά	Greek	-	✔
English	-	✔	✔
Español	Spanish	✔	✔
فارسی	Persian	-	✔
Français	French	✔	✔
한국어	Korean	✔	✔
हिन्दी	Hindi	-	✔
Hrvatski	Croatian	-	✔
Italiano	Italian	✔	✔
עברית	Hebrew	-	✔
Magyar	Hungarian	✔	✔
Nederlands	Dutch	✔	✔
日本語	Japanese	✔	✔
Norsk bokmål	Norwegian	-	✔
Polski	Polish	✔	✔
Português	Portuguese	✔	✔
Русский	Russian	✔	✔
Română	Romanian	✔	✔
Slovenčina	Slovak	✔	-
Suomi	Finnish	-	✔
Svenska	Swedish	✔	✔
ไทย	Thai	✔	✔
Tiếng Việt	Vietnamese	✔	-
Türkçe	Turkish	✔	-
繁體中文	Chinese Traditional	✔	✔
简体中文	Chinese Simplified	✔	✔

1.4.1.2 Add Object: Date/Time

Use a Date/Time object to print a production date or an expiration date.

STEP 1: In Add Object page, select **Date/Time** " Date/Time " and the following page will show. Select a template and key in expiration day/month/year.

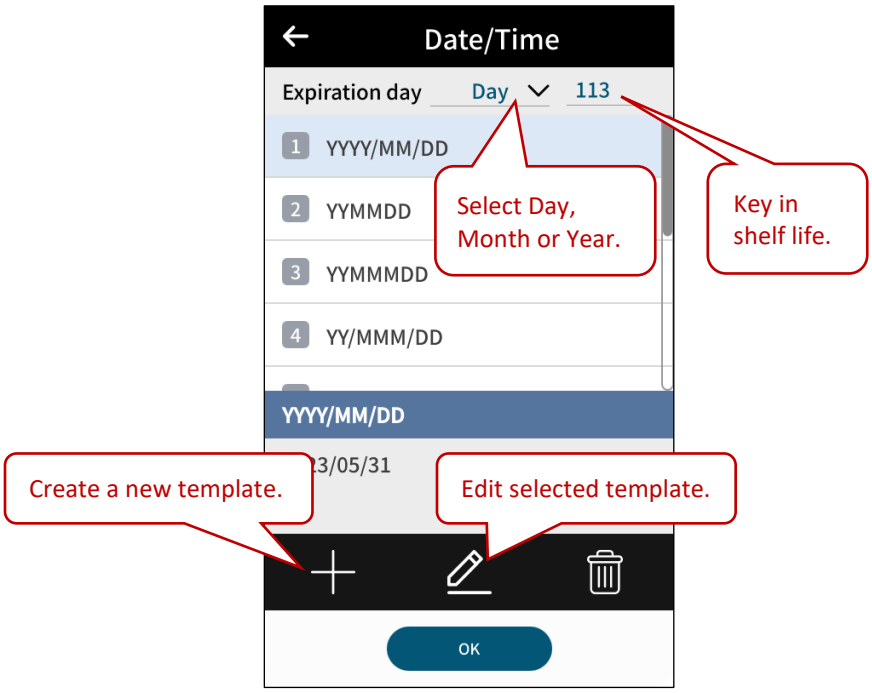


Figure 1-29. Add Object – Date/Time Template

STEP 2: If there is a **Format Preference** button, press it to select more format options.

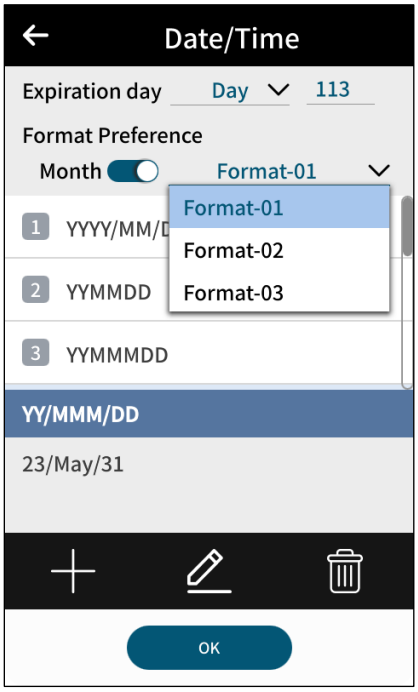


Figure 1-30. Add Object – Date/Time Format Preference

STEP 3: Or use "+" to create a new template. Use buttons like "Y", "M", "h", or ":" to add desired digit into the template. Press **Save** to enter Message Editor.

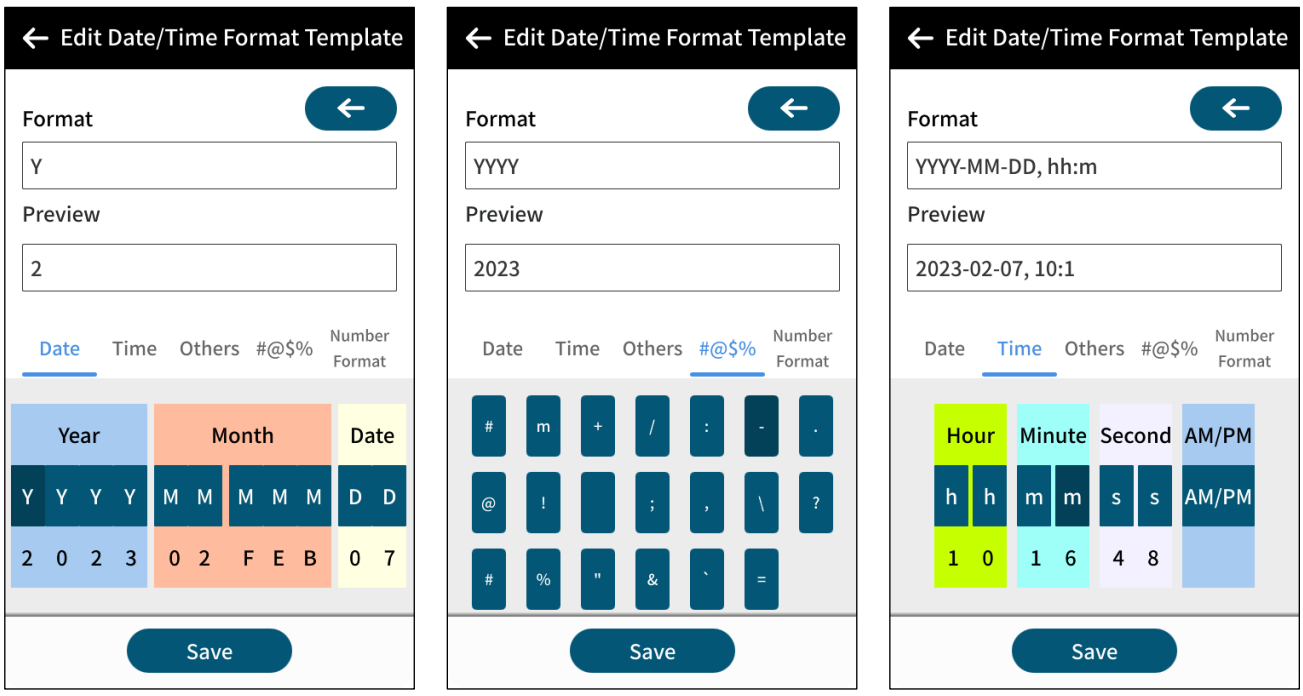


Figure 1-31. Add Object – Creating Date/Time Template

STEP 4: Double-click the selected Date/Time to access more settings.

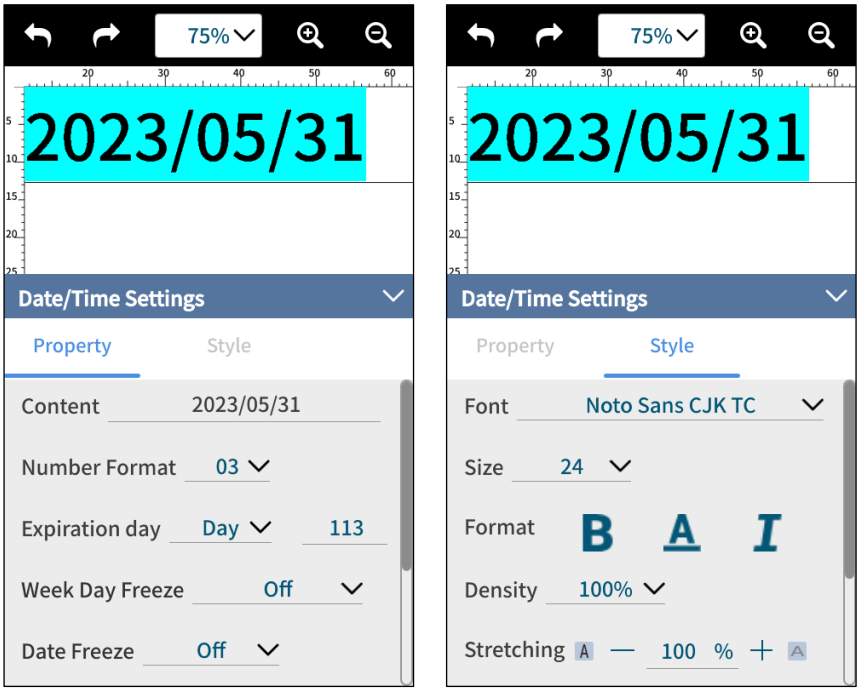


Figure 1-32. Add Object – Date/Time Settings

1.4.1.3 Add Object: Barcode

STEP 1: In Add Object page, select **Barcode** "Barcode" and the following page will show. Select barcode type and press **Next**.

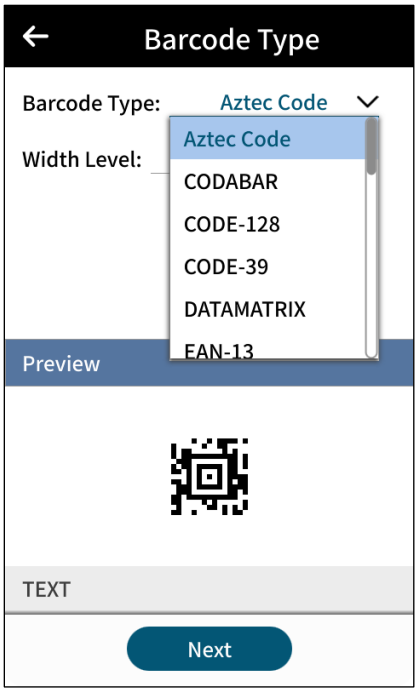


Figure 1-33. Add Object – Select Barcode Type

STEP 2: Select Text and use "+" or "✎" to create or to edit items inside a barcode. After item settings, press **OK**.

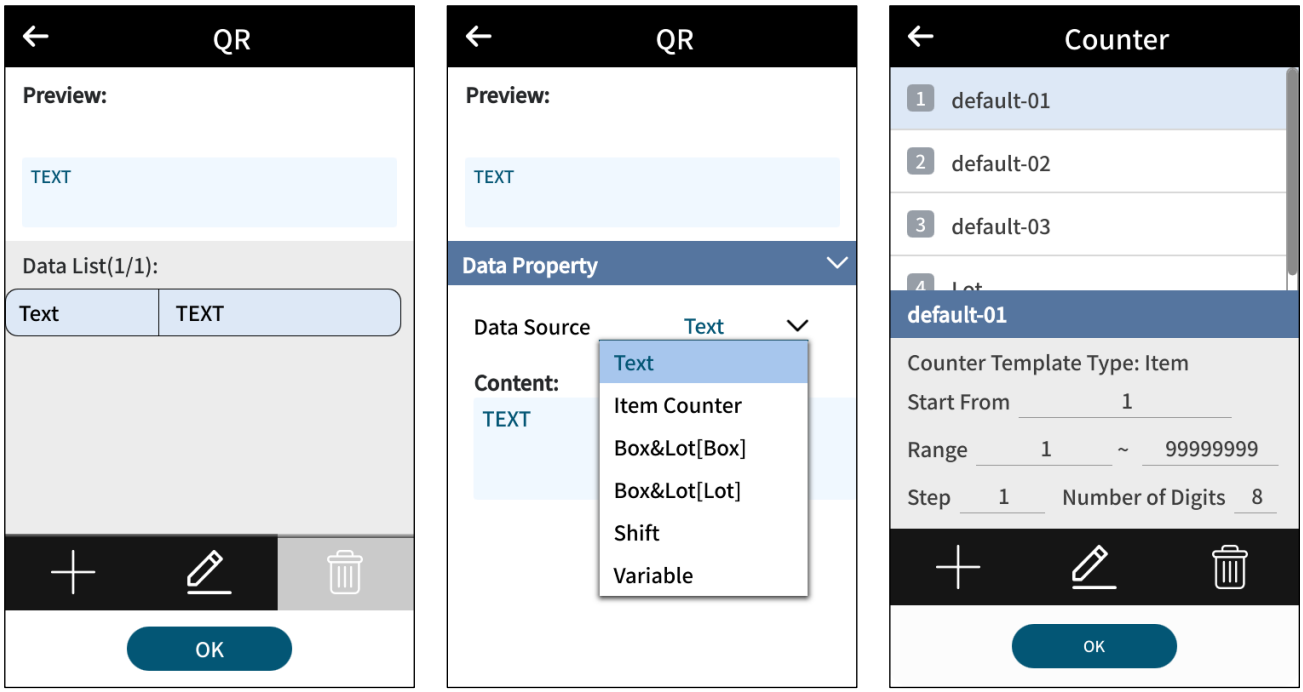


Figure 1-34. Add Object – Edit Barcode Content

STEP 3: In Message Editor, double click to enter Barcode Settings page.

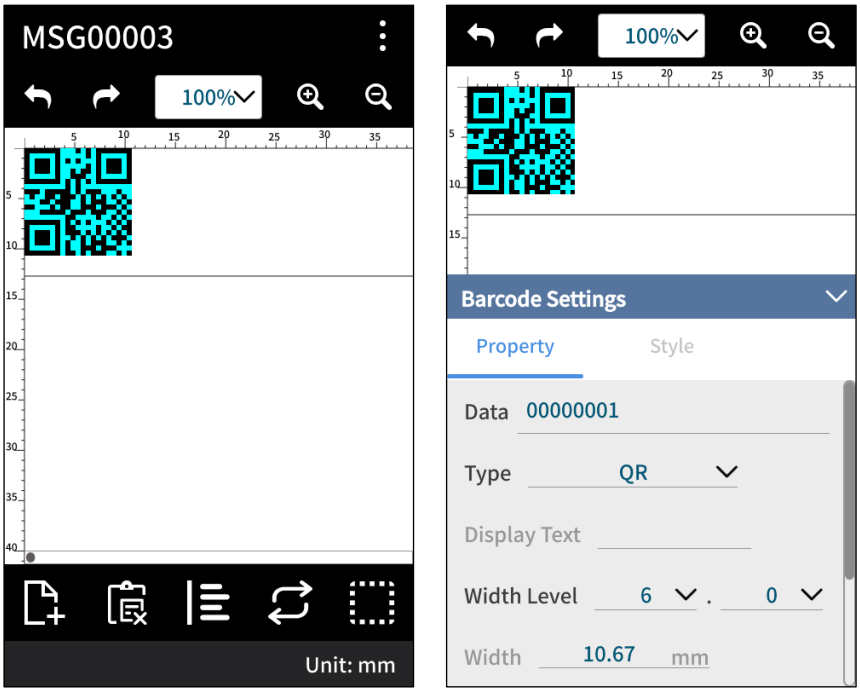


Figure 1-35. Add Object – Barcode Settings

1.4.1.4 Add Object: Variables

STEP 1: In Add Object page, press **Variables "**{X} Variable**"** and the following page will show. Use buttons below to create a variable "+", to edit selected variable "✎", or to delete a selected variable "🗑". After editing, press **OK**.

> **Note:** Please refer to **Section 3.1 Usage of the Variable Object** for more details. Sources of Variables can be Internal, External, or Database (when importing an Excel file).

Figure 1-36. Add Object – Variables

STEP 2: Double-click the selected variable to adjust its style. And the GS1 data matrix variable is ready.

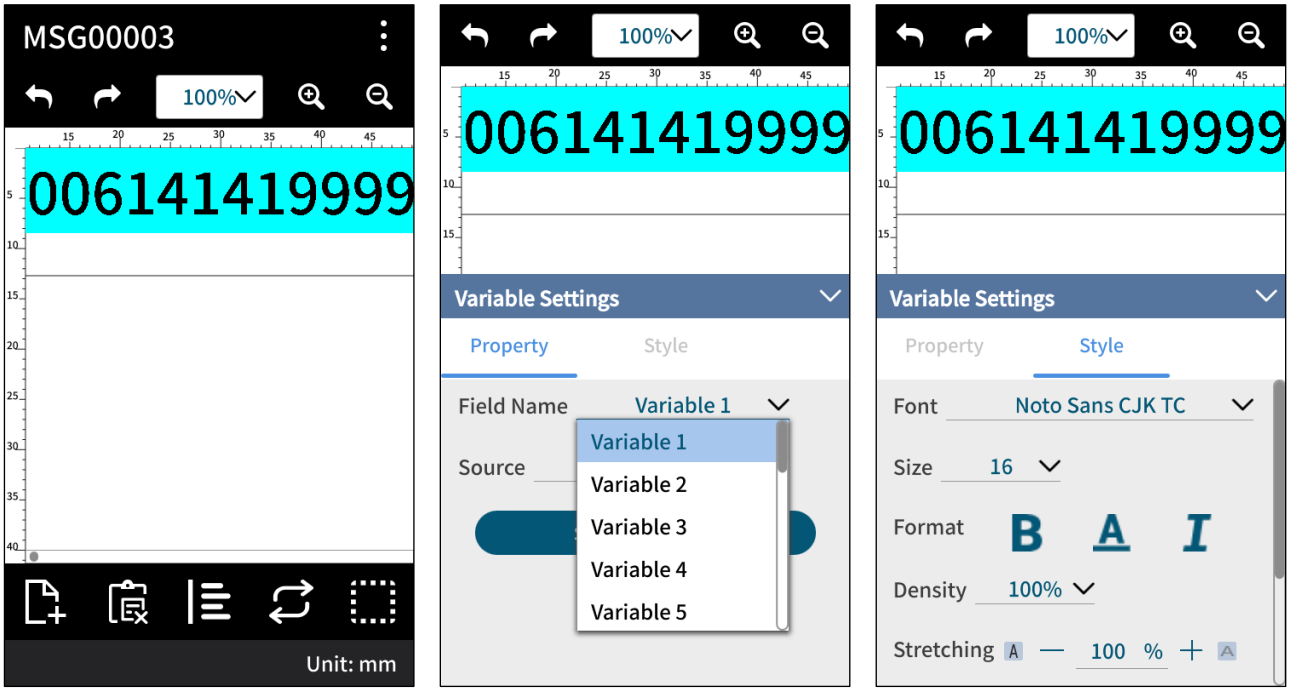


Figure 1-37. Add Object – Variable Settings

1.4.1.5 Add Object: Counter, Image, Shape, and Shift

STEP 1: In Add Object page, press "Counter", "Image", "Shape", and "Shift" and the following pages of Counter, Image, Shape and Shift will show respectively. Use lower buttons to create "+", to edit "✎", or to delete "🗑" a certain object. After that, press **OK**.

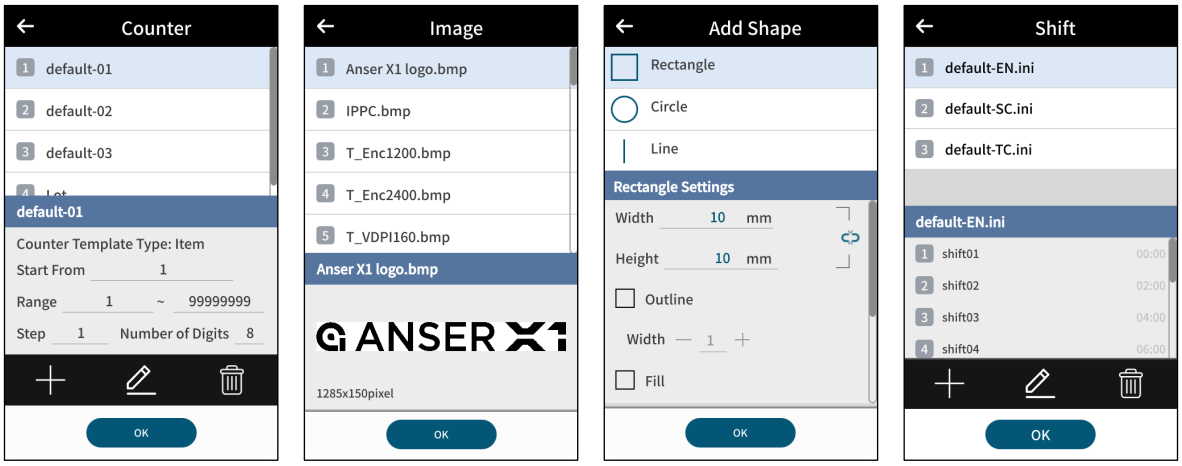


Figure 1-38. Add Object – Counter, Image, Shape and Shift

STEP 2: Template Inserted. Make detailed adjustment in each of their settings pages.

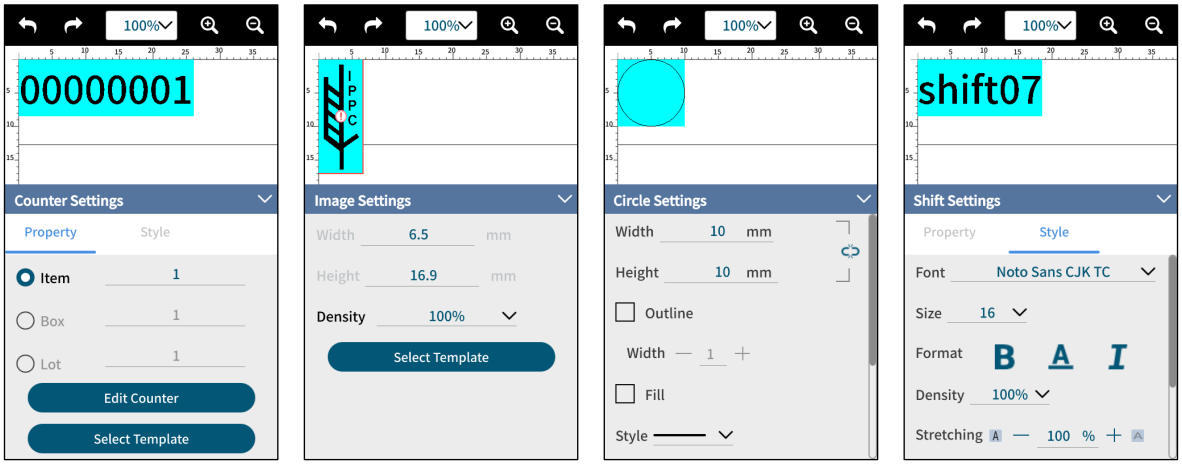


Figure 1-39. Add Object – Counter, Image, Shape and Shift Settings

STEP 3: After editing, go to **More Settings "** **"** and press **Save "** **"** or **Save As "** **"** to store final editing result.

STEP 4: In homepage, select a message and production line and get ready to print.

> **Note:** Close A1 dust cover before hitting the **Start "** **"** botton to ensure that cartridge latch remains closed.

1.4.2 Message Related Settings

Table 1-6. Message Related Settings

Option	Description
Message Name	Default system message or custom input by the users.
Printouts	Set a maximum number of prints for the message. The value zero means no limit.
Line Mode	Add editing guidelines to message editor. It is useful when creating a message with content spread in multiple lines.
Delay	It represents the distance (unit: mm or inch) from the sensor to the printhead cartridge nozzle, i.e., the distance between product detected by the sensor and the desired spot of a message. Each individual message can have its own delay value. Please refer to **Figure 1-40**. When it is enabled, it overwrites **Print Station Delay** (see **Figure 1-47**).
Direction	Message printing direction, as a default, follows print station **Print Direction**.
Upside Down	**Default:** Follow the print station setting. **Normal:** Overwrite the upside-down printing settings in the print station. **Upside Down:** Print the message upside down.
Height	Message height based on the printhead height.
Width	Display the total width of the current message.
Fixed Width	Adjusts the width of the entire message when the width changes due to variable content.
Full Text	Reduces the blue area (empty area) surrounding message objects.

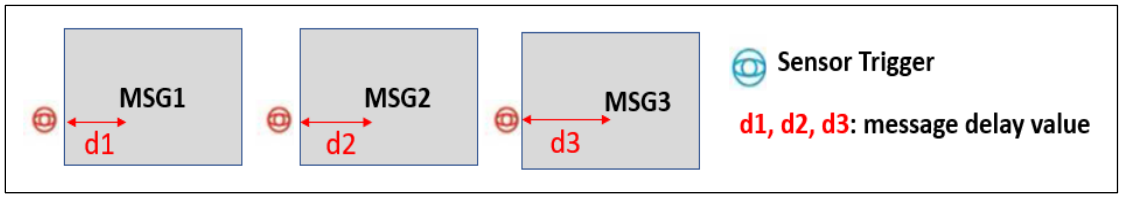


Figure 1-40. Message Delay

1.4.3 Printing a Message

STEP 1: In homepage, press the message box " " or go to **Menu "☰" > Select Message** to select a message. Press **Next**.

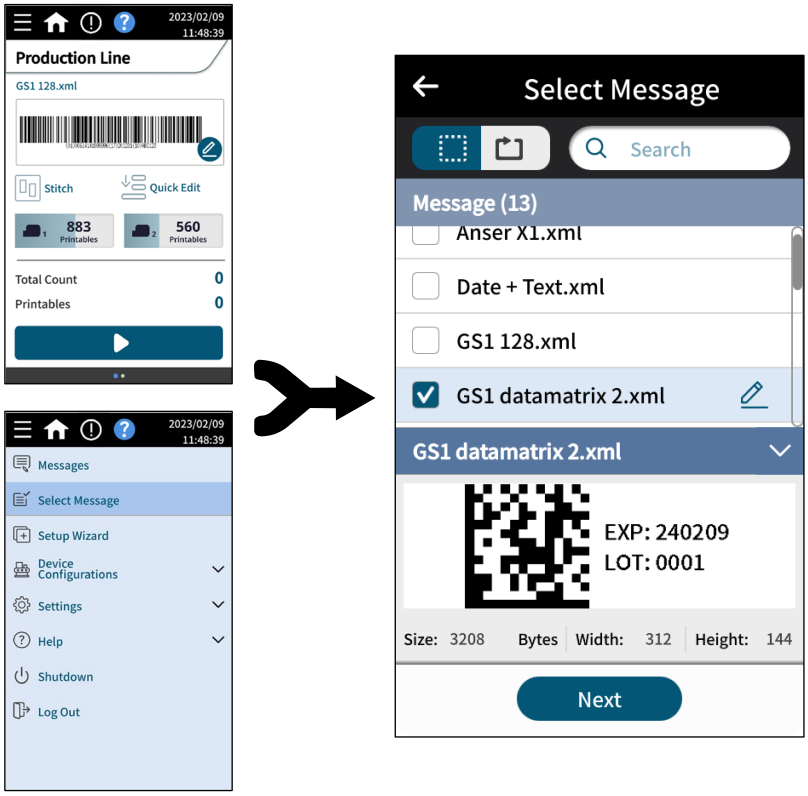


Figure 1-41. Homepage and Select Message

STEP 2: Select a production line. Press **OK**.

Figure 1-42. Select a Production Line

STEP 3: Press **Start "** [redacted] **"** to print.

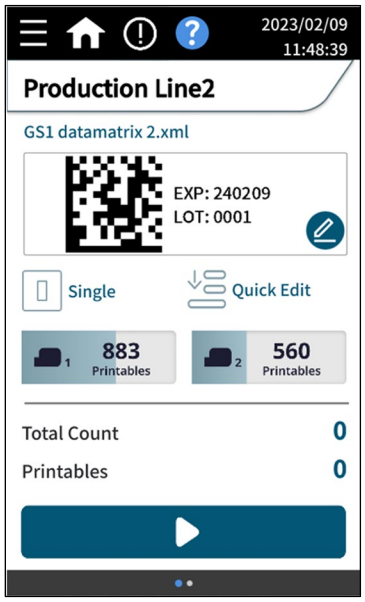


Figure 1-43. Print Message

> **Note:** Close A1 dust cover before hitting the **Start "** [redacted] **"** botton to ensure that cartridge latch remains closed.

1.5 Getting to Know the Device Configuration Page

The device configuration menu is where users find settings related to the production line, print station, printheads, and external devices. If initially no setup has been done, users can access this page to set up the printer. Additionally, settings for serial communication capable devices can be found on the **External Devices** page.

1.5.1 Production Line & Print Station Page

It displays an overview of the production line and allows users to create, edit, and remove production lines and print stations. One production line setup can support one print station in single mode or stitch mode. Same printhead can exist within multiple production lines setup, but two production lines can't use the same printhead simultaneously.

In homepage, press **Production Line "** Production Line **"** or **Menu "** ☰ **"** to go to Production Line page.

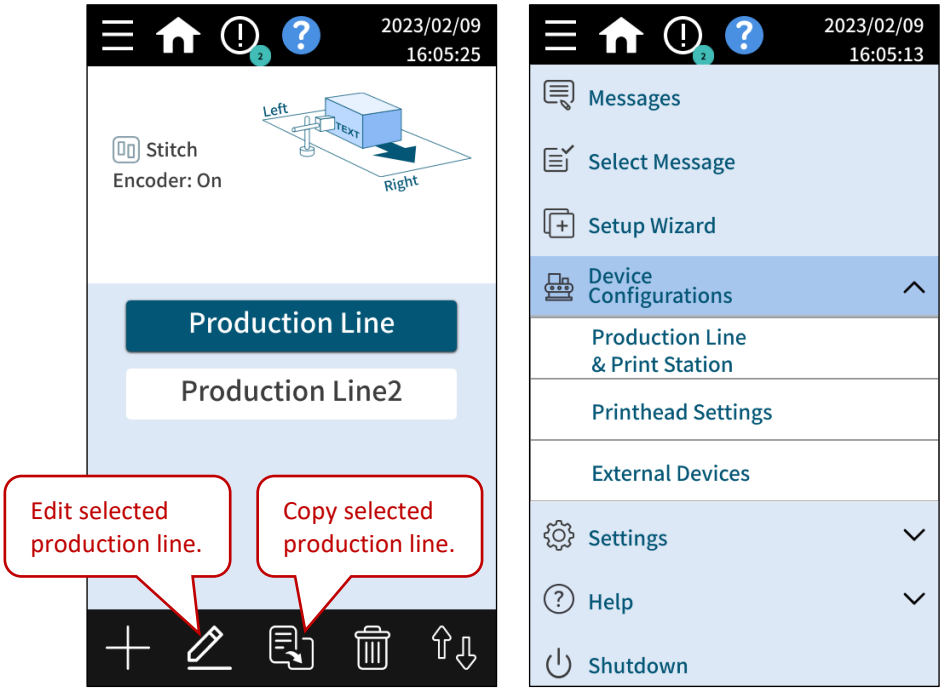


Figure 1-44. Production Line & Print Station Page

The Production Line & Print Station page allow users to perform the following:

- Create a production line.
- Access production line settings.
- Delete or duplicate a production line.
- Import or export production line.

Use **Edit "** **"** to access **Production Line & Print Station** settings page and set parameters related to the production line as below **Figure 1-45** shows.

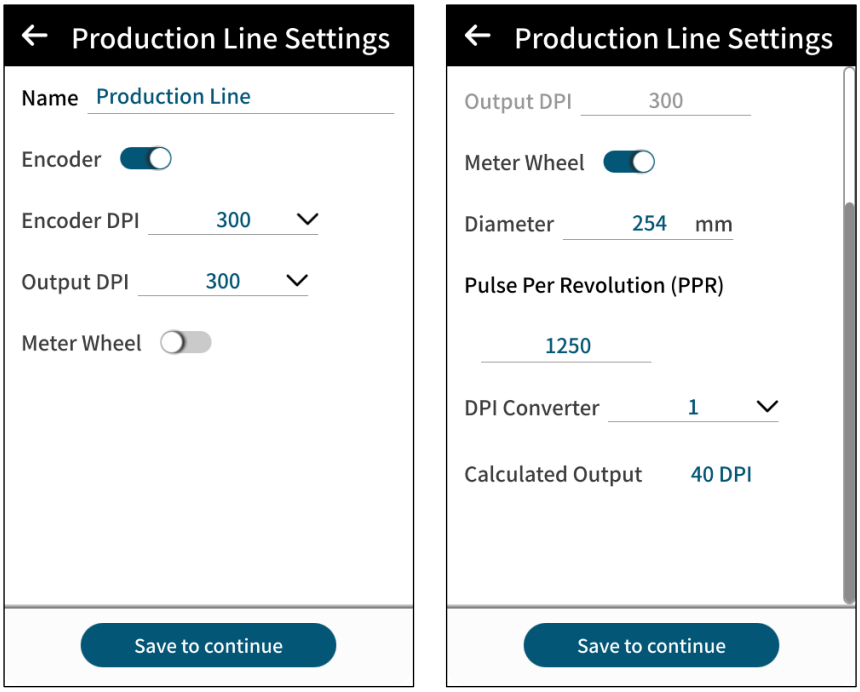


Figure 1-45. Production Line Settings Page

Table 1-7. Production Line and Print Station Settings

Option	Description
Encoder Source	Encoder is connected to the printer. If encoder option is switched off, i.e., not connecting encoder, printer will generate the signal with a constant speed by itself. Please refer to **Section 2.1**.
Encoder DPI	Resolution (DPI) of the encoder.
Output DPI	Actual printout DPI. Users can divide encoder DPI into the smaller value.
Meter Wheel	Enable the option to use your own encoder. Users can manually input the diameter and PPR.
DPI Converter	Divide encoder DPI by 1 to 8.
Calculated Output	Show actual printout DPI calculated by diameter, PPR and DPI converter. $\mathrm{DPI} = \frac{\mathrm{PPR} * 25.4}{\mathrm{D} * \pi * \mathrm{converter}}$

1.5.2 Print Station Settings

In Production Line settings page, press **Save to continue** "Save to continue" to enter Print Station Settings page where users can assign different print station modes (Single or Stitch Mode). Swipe up to find settings related to the photocell sensor, print direction, and print delay.

1.5.2.1 Single Print Station Mode

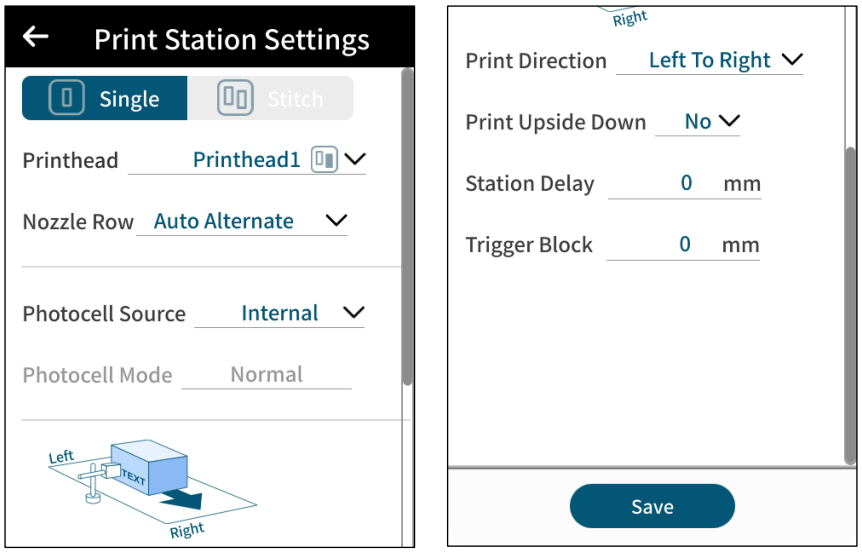


Figure 1-46. Print Station Settings – Single Mode

1.5.2.1.1 Print Station Delay

Users must measure the distance from the sensor trigger point to the location of the product where message printing starts, and the measurement should include the distance from sensor installation to the cartridge nozzle. The definition of print station delay is the same as message delay, and the differences are: 1. Print station delay is set for all messages with a default value while message delay is set for individual message with higher priority; 2. When no message delay is set, A1 will use print station delay as message delay.

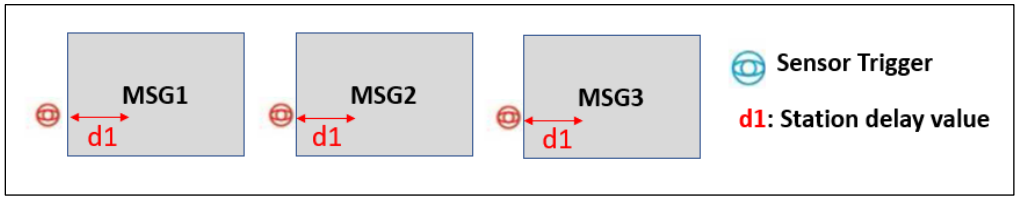


Figure 1-47. Print Station Delay

> **Note:** The same delay value applies to all printing messages.

1.5.2.2 Stitch Print Station Mode

The stitch mode print station allows users to use two half-inch or one-inch printheads, thus achieving prints with a height of up to two inches. One production line can have one print station in stitch mode.

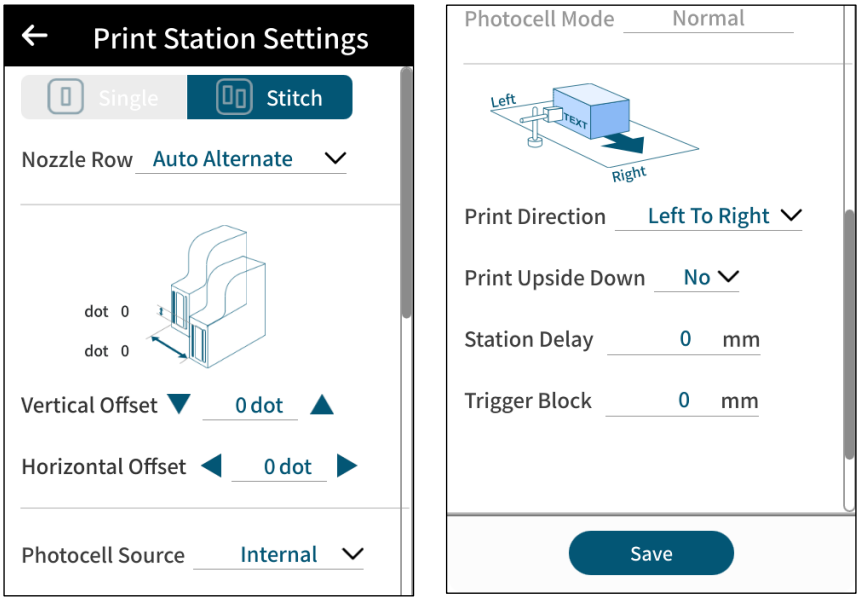


Figure 1-48. Print Station Settings – Stitch Mode

1.5.3 Printhead Settings

After one print station is created, users can configure parameters related to the printheads bound to the print station.

In homepage, press **Ink Cartridge Info** “ 883 Printables ”, or use **Menu** “ ☰ ” > **Device Configurations** “ ” > **Printhead Settings** to enter the page, as shown in **Figure 1-49**.

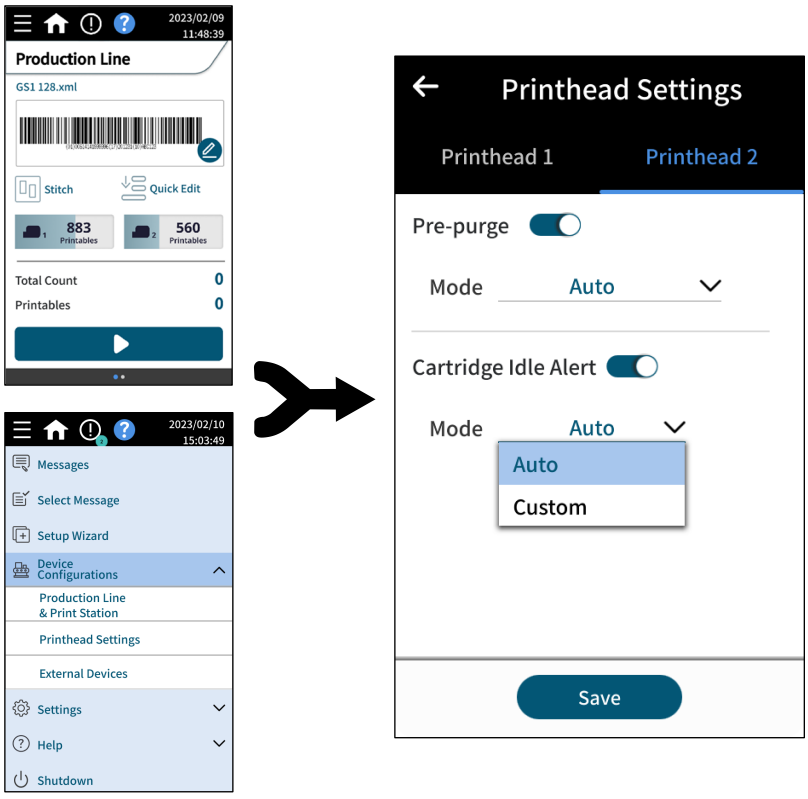


Figure 1-49. Printhead Settings Page

Table 1-8. Detailed Printhead Settings Description

Option	Description
Pre-purge	Firing ink drops to avoid nozzles dry out from the result of cartridge short-decap, when printing in dry environments. **Auto:** Automatically determine parameters for the ink cartridge inserted**.** **Custom:** Manually set the time and level parameters to purge the nozzles. - **Interval:** The time in seconds to start a purge cycle. - **Level:** Refer to the frequency of pre-purge cycle. The higher the level, the shorter time for each purge cycle.
Cartridge Idle Alert	Cartridge idle counter will increase when cartridge is in idle state (print on or off), and trigger warning when reaching the wipe reminder value. **Auto:** Apply default value according to the decap time of currently used ink. **Custom:** Manually set the time.
Pre-heating	For ink cartridge H-A01 only. Heat the cartridge beforehand to facilitate smoother ink ejection in low-temperature environments.

Note: For printhead related settings, please refer to **Table 1-1** for Nozzle Row and **Table 1-7** for DPI.

1.5.4 External Devices

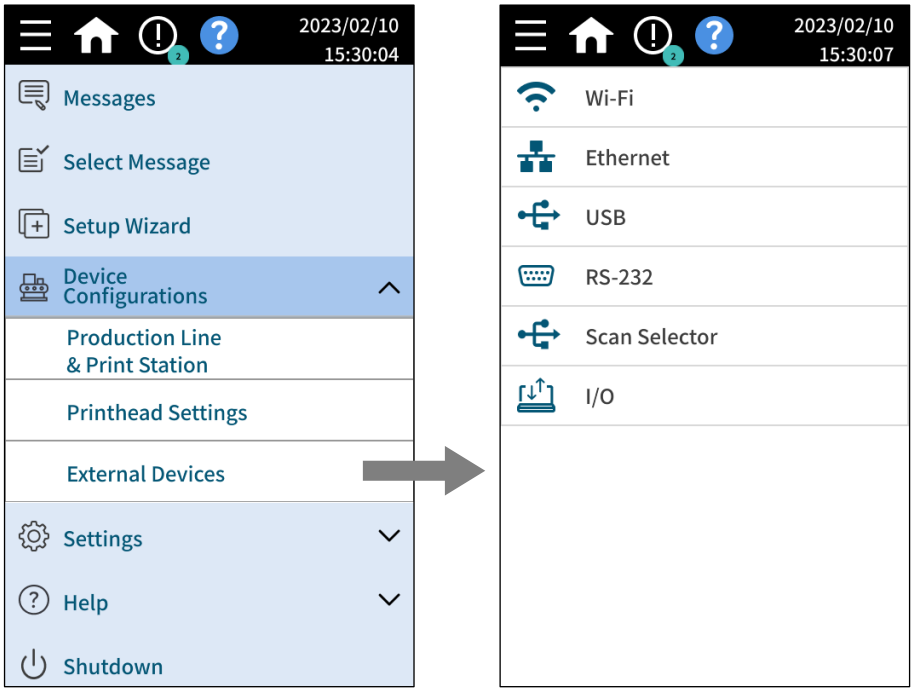


Figure 1-50. External Devices Page

1.5.4.1 Wi-Fi

Wi-Fi menu displays options to connect the A1 printer to Wi-Fi hotspot. Please note that a USB-to-WiFi dongle is required. Supported model: TP Link TL-WN823N.

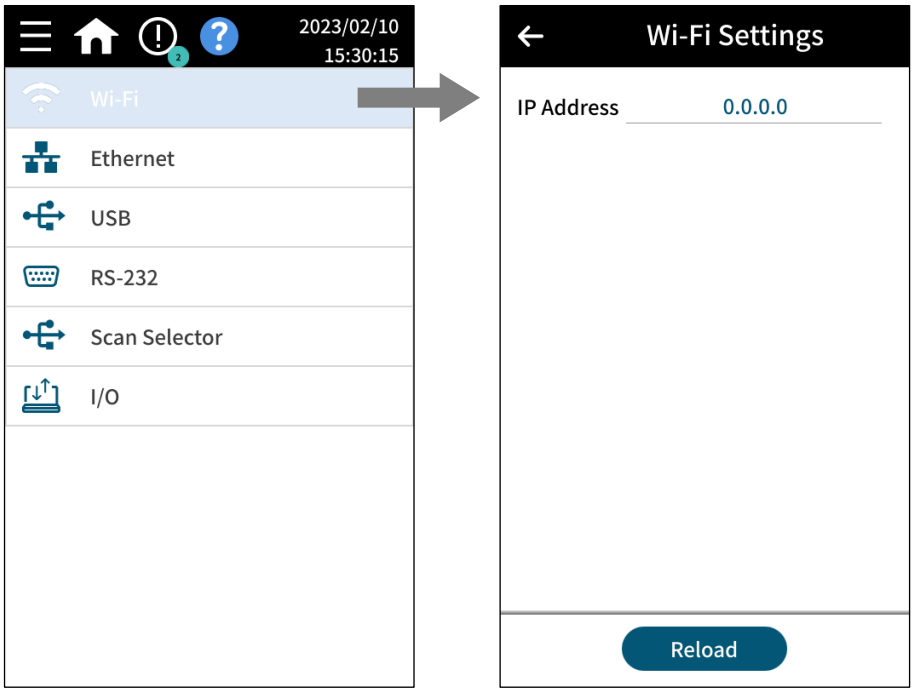


Figure 1-51. Wi-Fi Settings Page

1.5.4.2 Ethernet

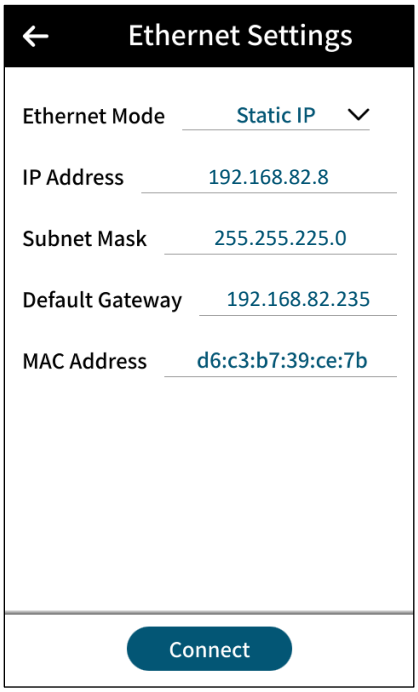


Figure 1-52. Ethernet Settings Page

Ethernet menu displays Ethernet port connection settings. DHCP or static IP mode is supported. A1 default IP is displayed in the above figure. Connect an RJ-45 Ethernet cable to A1's Ethernet port to remotely control and monitor using A1 Modbus TCP/IP communication protocol.

1.5.4.3 USB

USB page displays the port settings for USB devices such as barcode scanners. A1 uses the USB interface as a serial virtual COM port to communicate with serial devices. Virtual COM port enables A1 to access a USB device as if it were a built-in serial port.

When connecting barcode scanners, please make sure that the scanner is setup as virtual COM port and not as a Human Interface Device (HID). Some barcode scanners might not have a virtual COM port option, instead, setup the scanner as USB communication device class (CDC) which also works in A1.

> **Note:** If you are using USB virtual COM for the first time, please connect the scanner to the PC, and install the driver before connecting to A1.

1.5.4.4 RS-232

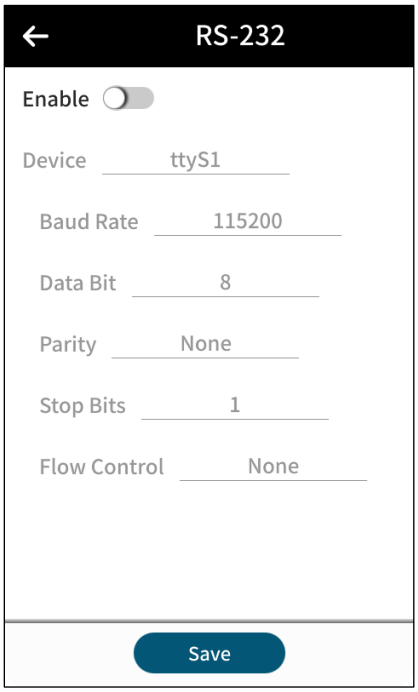


Figure 1-53. RS-232 Page

RS-232 menu displays the settings for configuring the RS-232 port interface. Enable this setting when working with serial devices that communicate via RS-232 interface.

Please refer to *A1 Technical Specifications V0.1* for A1 M8 8-pin RS-232 pinout and definitions.

1.5.4.5 Scan Selector

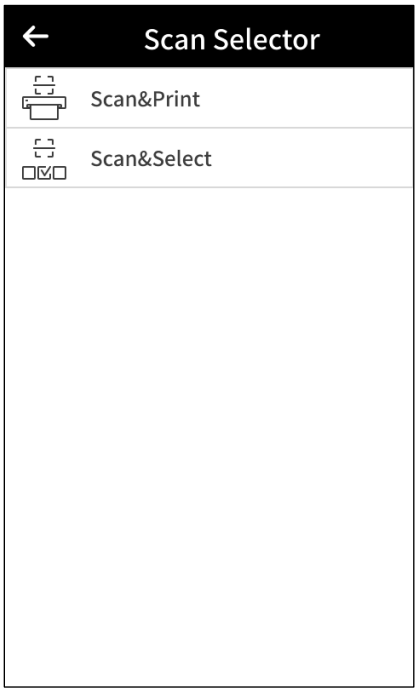


Figure 1-54. Scan Selector Page

1.5.4.6 Scan & Print

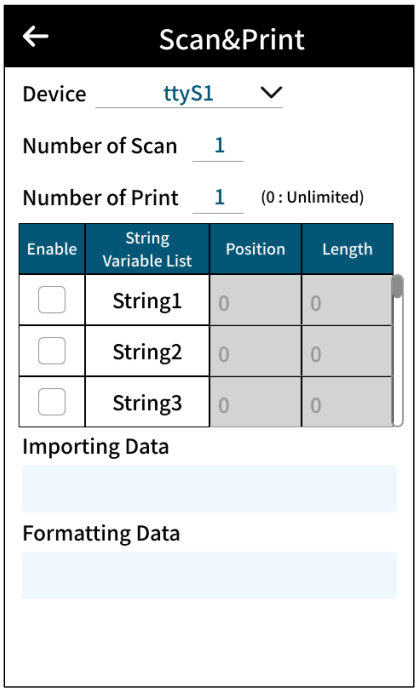


Figure 1-55. Scan & Print Page

Scan & Print menu allows users to manage the serial data when using the USB (virtual COM) or RS-232 interfaces.

The data is contained into the variable objects which later can be used when creating a message. Scan & Print also permits to split the data into parts according to position and length of the serial data.

Table 1-9. Scan & Print Settings Definition

Parameter	Definition
Device	- **ttyS01** stands for RS-232 and **ttyS04** for RS-485 when no device is connected or the scanner is not setup as virtual COM or CDC. - **ttyACM0** or **ttyUSB0** will appear when A1 detects the serial device.
Number of Scan	- Perform multiple scans, data is stored to variable1, variable2, up to 20. - In the upper right corner of the home page, Scan&Print button "0/1" will show "Current Scan Number / Number of Scan". Press it to see the scan data. Note: If there's more than 1 scan, position and length for serial data is not supported.
Number of Print	Set a count for how many times to print the scan data. **0:** Unlimited number of prints. **1-50:** Limited number of prints.
Variable File	**Off:** Doesn't save to internal variable table. Works as a buffer. **Variable Table List:** Select one table to save the data.
Position	Set the starting position from where to start capturing part of data stream.
Length	Set the size of how many characters the system wants to capture from the data stream.
Importing Data	A preview of the scan data before setting position and length.
Formatting Data	View data after it is split into multiple variables according to position and length.

1.5.4.7 Scan & Select

Scan & Select module allows users to set a message to print mode by scanning a barcode.

Users define a rule that contains data key and the message to print. A1 compares whether the input data key is presented in the scan data or not. If the key matches, then A1 will assign the linked message to the production line.

> **Note:** A maximum of 1000 individual users' rules can be created.

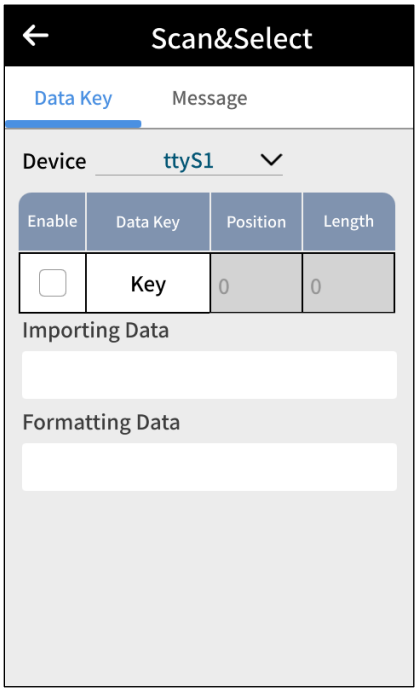


Figure 1-56. Scan & Select – Enable Data Key

Please refer to **Section 1.5.4.6 Scan & Print** to learn how to setup position and length for incoming scan data.

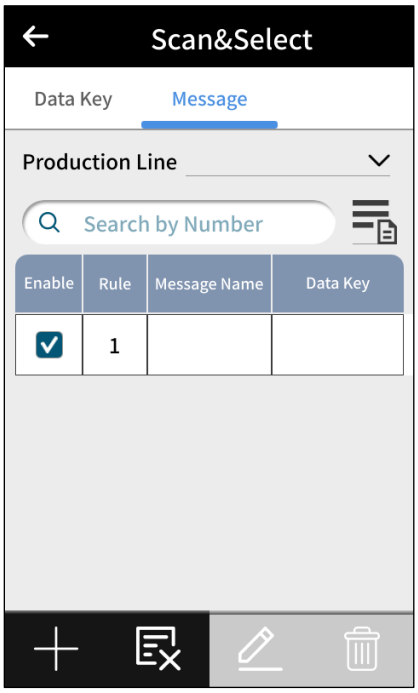


Figure 1-57. Scan & Select – Enable Rule 1

Table 1-10. Scan & Select Settings Definition

Parameter	Definition
Rule	Index for the scan and select conditions.
Production Line	Select the production line where users want to assign the selected message. Note: Only one production line can be selected.
Message Name	Select the message that will be selected if the Data Key matches the scan data.
Data Key	The data that is expected to be contained in the scan stream.
Assigned Station	Select one or two stations where users assign the message.
Enable	Check to enable the rule conditions.

1.6 Getting to Know the Settings Page

In homepage, use **Menu “ ” > Settings “ ” > System** to adjust system settings.

1.6.1 System Settings

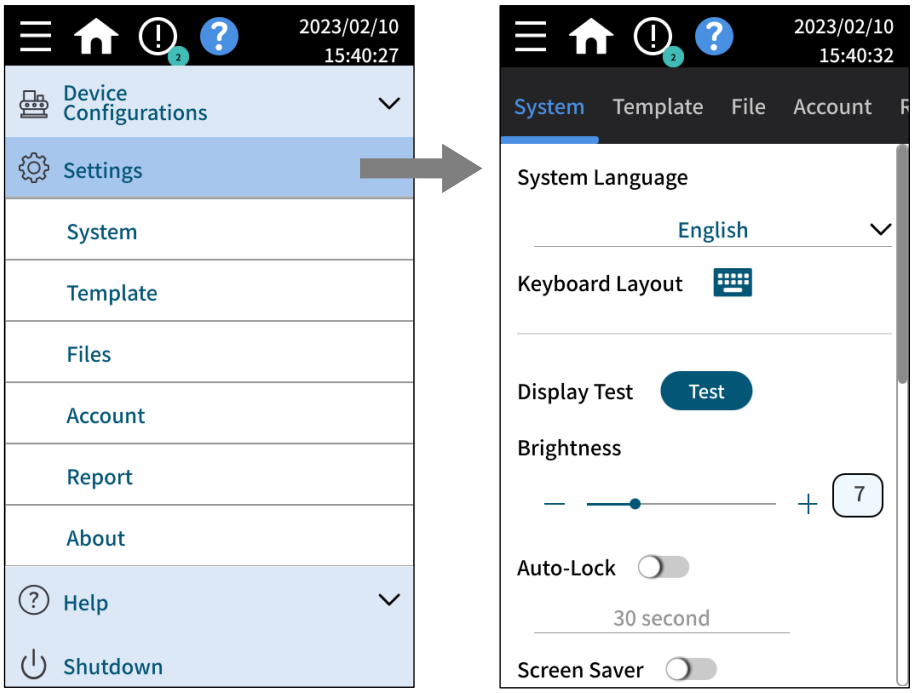


Figure 1-58. A1 System Settings Page

Table 1-11. A1 System Settings Description

Option	Description
System Language and Keyboard Layout	It allows users to change system language and add multiple languages to the keyboard.
Screen Settings	It allows users to configure the following items: **Display Test:** Perform a test on the LCD panel. **Brightness:** Adjust the brightness of the screen. **Auto-Lock**: Log users out of the system. Note: A password is required to log in again. **Screen Saver**: It blanks the screen when the printer has been idle for a specified time. **Screen Flip**: It allows users to rotate the screen 180 degrees when the printer is installed up-side-down. **Touchscreen Sensitivity:** Turn it down to prevent any accidental touch in dusty environment.
System	**System Time**: It allows to set the system time. **System Unit**: It allows to set the measurement unit.
Status Refresh	The time interval to update the information displayed on the homepage.
Message Display Effect	**Off:** Message preview is displayed according to settings such as print upside down. **On:** Message preview is not affected by print upside down setting.
Protocol	**Modbus Printer ID:** Assign an ID number to identify the printer when using the protocol. **Protocol Version:** Select a protocol version to communicate with the printer.

1.6.2 Template Management

Go to **Menu "** **" > Settings "** **" > Template** (see **Figure 1-59**).

Using templates is a good way to facilitate message creation for users. One or multiple templates for a specific object can be defined and used throughout all messages.

When a template is imported into a message, a copy is created of that template. Even if the template were deleted, it won't affect the copy contained within the messages.

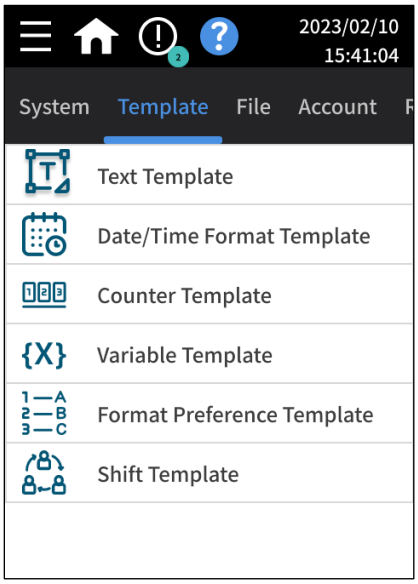


Figure 1-59. The Template Management Page

Table 1-12. Detailed Descriptions in Template Manage Settings

Option	Description
Text Template	Allows users to create text objects that contained pre-fixed content.
Date/Time Format Template	Allows users to create custom template formats for date and time objects.
Counter Template	Allows users to create templates for counter objects.
Variable Template	Allows users to create a table of variable objects containing pre-defined content. Can be used to store data sent by external devices.
Format Preference Template	Customize the name of the months used in production and expiry date objects.
Shift Template	Allow users to create a table of work shifts for different operators and hourly periods.

1.6.3 File Management

Navigate to **Menu "** **" > Settings "** **" > File** (see **Figure 1-60** below.) to access the **File Management** page.

The file management page is a file center where users can manage all different types of files used throughout the systems. Here, users can import and export one or more files. The import and export process are done using USB.

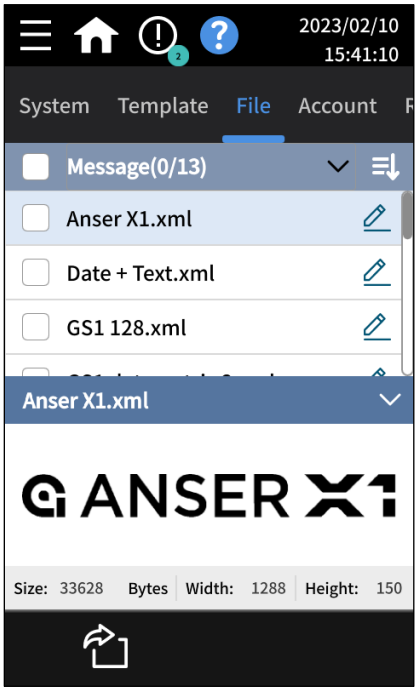


Figure 1-60. The File Management Page

1.6.4 Account / User Management

Navigate to **Menu "** **"** **> Settings "** **" > Account** (see **Figure 1-61** below.) to manage user accounts.

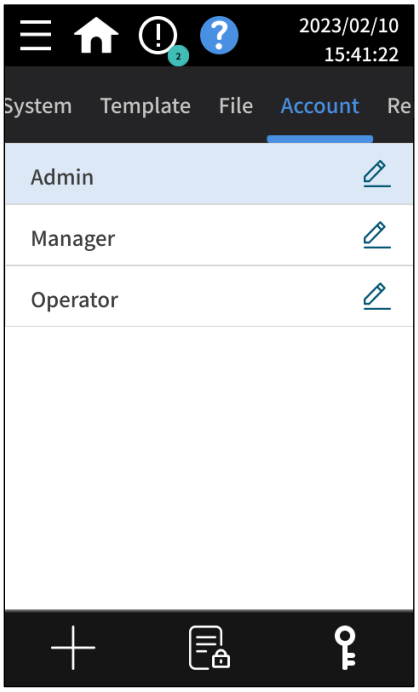


Figure 1-61. The Account Page

The A1 system provides three default accounts (Admin, Manager, and Operator), and each has their respective access levels. (Please see **Table 1-13** below.) Admin can edit options for each account, delete existing accounts, and add new ones.

The user management page allows users to create 13 additional user accounts. Each user can have different access levels for message creating, print jobs settings, and system configurations.

Table 1-13. A1 User Accounts Management Table

Access Level	Admin	Manager	Operator
Start / Stop / Select Message	✔	✔	✔
Create Message	✔	✔	-
Delete Message	✔	✔	-
Message Settings	✔	✔	-
Edit Message	✔	✔	-
Production Line and Print Station	✔	✔	-
Printhead Settings	✔	✔	-
External Devices	✔	✔	-
Quick Edit	✔	✔	-
Information Display	✔	✔	✔
System Settings	✔	✔	-
Template Management	✔	✔	-
File Management	✔	✔	-
User Management	✔	-	-
Report	✔	✔	✔
Restore / Backup / Reset	✔	✔	-
About Printer	✔	✔	✔
Import / Export Printer Settings	✔	✔	-

Note: The default password for Admin is **Admin**, Manager is **Manager** and Operator is **0000**.

1.6.5 Report

Navigate to **Menu "** **" > Settings "** **" > Report**. (Please see **Figure 1-62** below.)

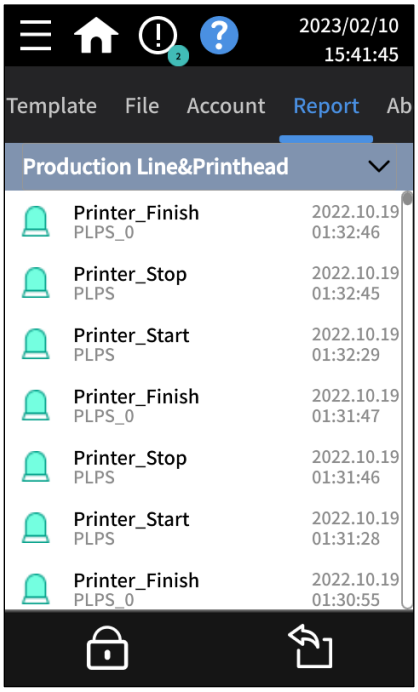


Figure 1-62. The Report Page

The **Report** page provides information and logs of Production Line & Printhead, System, Connection and Ink Operation.

Press **Export** in the lower right corner to copy these operation reports to a USB drive connected to the printer.

1.6.6 About Printer

Navigate to **Menu "** **"** **> Settings "** **" > About** (refer to **Figure 1-63** below.) to see detailed printer information.

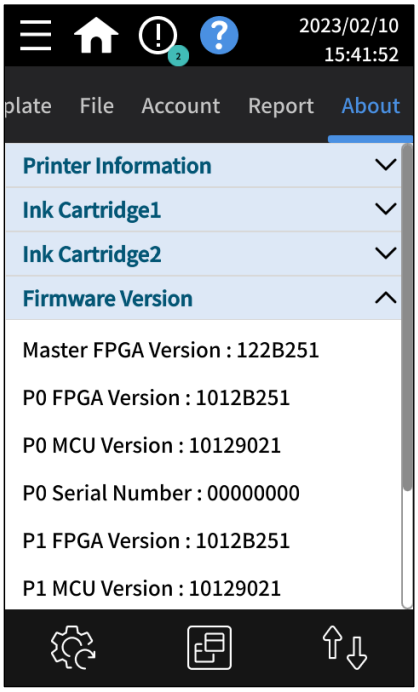


Figure 1-63. The About Page

The **About** page provides information about software and hardware version of the printer as well as information about printheads and ink cartridges.

Options to reset the system to factory default "", to restore the system from a backup "", and to import/export "" can all be found in this page.

2 A1 Printing Setup

2.1 Production Line Setup

Production line settings are the top layer of the A1 function structure, (Please see **Figure 1-4**.) and they encapsulate print stations and messages. It is required for having a production line created before setting up print stations and selecting messages.

In homepage, press **Production Line "** Production Line **"** or use **Menu "** **"** **> Device Configuration "** **" > Production Line & Print Station > Edit "** **"** to go to settings page. Please refer to **Figure 2-1** below.

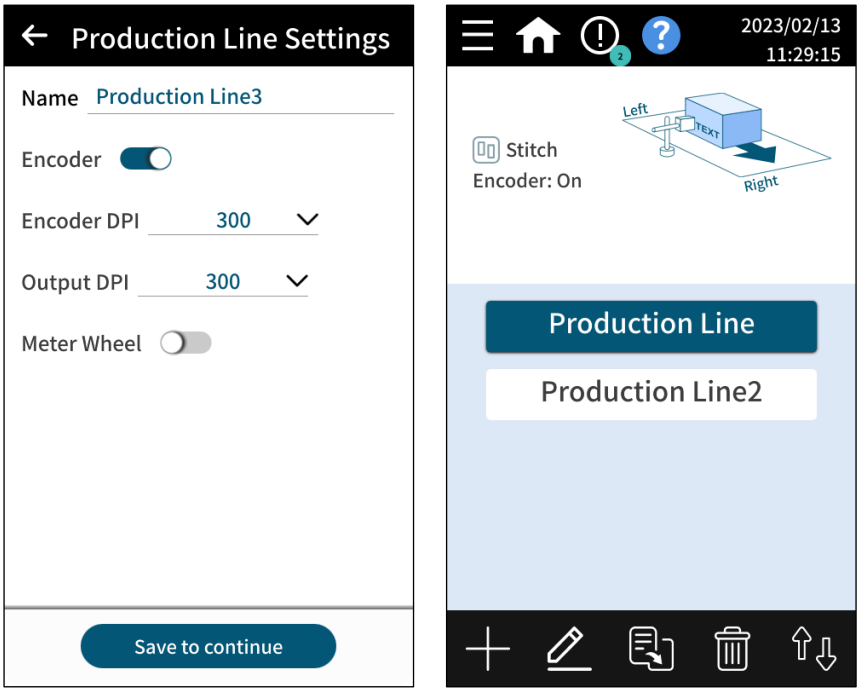


Figure 2-1. Production Line Settings Page

Users have the options to create a production line either by pressing the **Add "** **"** button or **Import/Export "** **"** to import one from the other printer's backup settings.

To create a production line:

a. Press **Add "+"** button.

b. Name the production line.

c. Production Line speed settings. Please see the **Figure 2-2** below.

i. **With Encoder:** To enable encoder and select DPI.

ii. **No Encoder:** Input conveyor speed or use test option to detect current product speed by using a photocell sensor and width of a product.

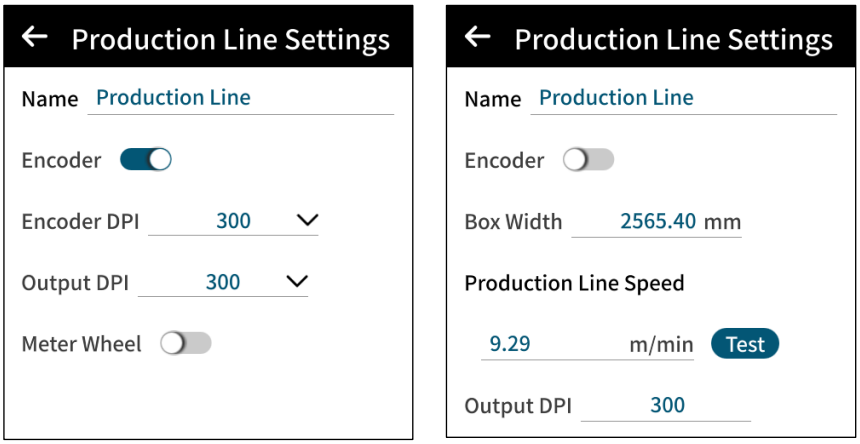


Figure 2-2. Production Line — Encoder Settings

d. Select encoder DPI value according to encoder or input wheel pulse and diameter to calculate.

e. Press the **Save** button before proceeding to print station setup.

2.2 Print Station Setup

Print stations can contain one or two printheads combined in different modes. Please see **Figure 2-3** below for the settings page.

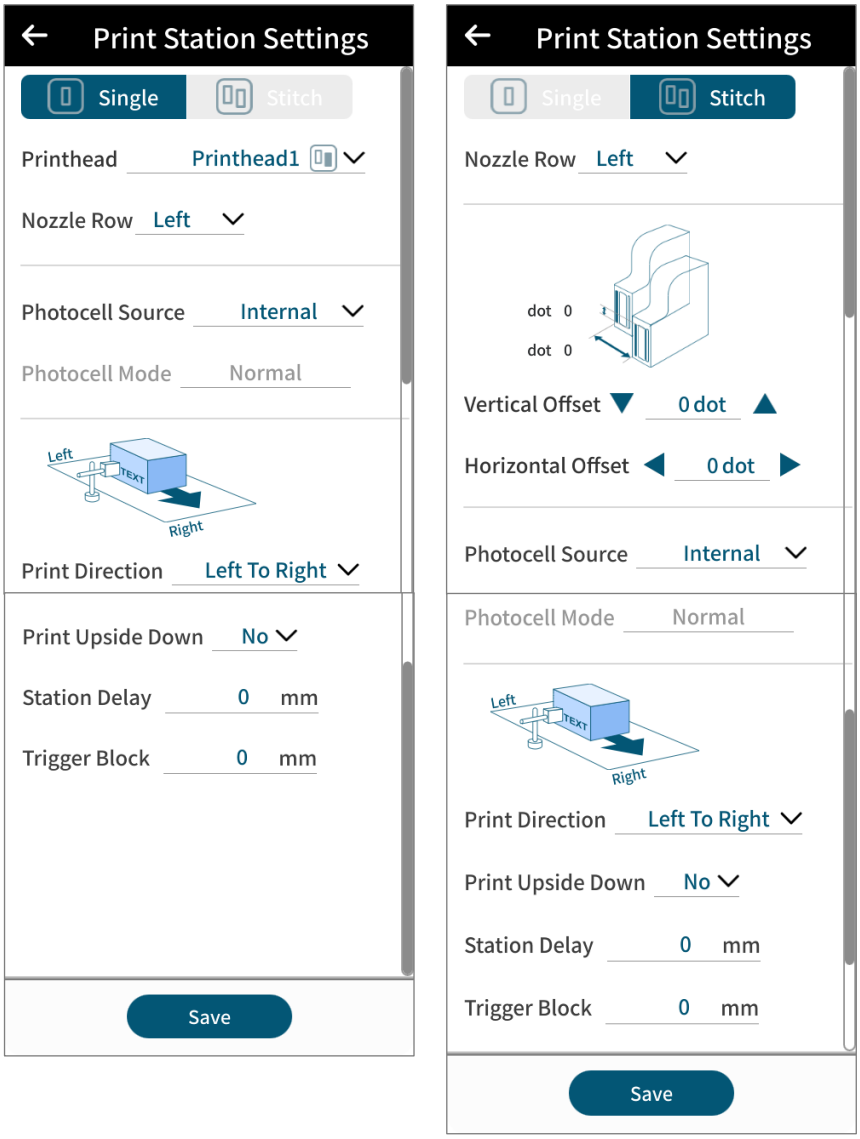


Figure 2-3. Print Station Settings

While in the production line settings page,

a. Press **Save to continue "** Save to continue **"** to enter print station settings page.

b. Select print station mode (single or stitch).

c. Move down by swiping up to select settings related to nozzle row, photocell sensor source, print direction, print upside down, and station delay settings.

d. Press **Save** to go back to production line list.

2.3 Printhead Settings

In the printhead settings page, pre-purge, cartridge idle alert and related options can be found. Likewise, Pre-purge options can be configured to keep the nozzles moist when working in hot and dry environments. Please see **Figure 2-4** below.

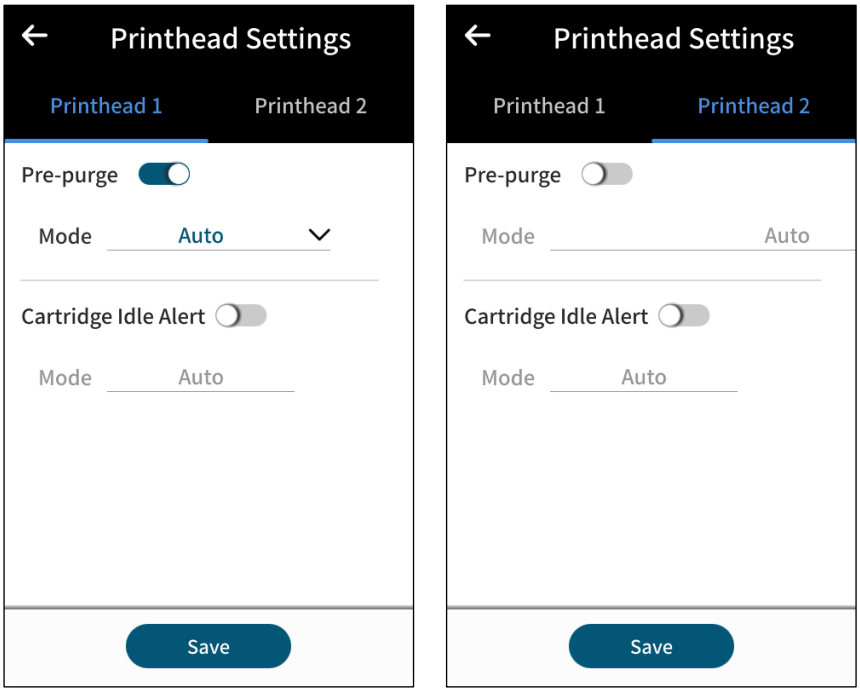


Figure 2-4. Printhead Settings

To access Printhead Settings page, use **Ink Cartridge Info** "

" button in homepage, or:

a. Use **Menu "** **" > Device Configurations "** **" > Printhead Settings**.

b. Set the required parameters.

c. Press the **Save** button to store printhead settings.

> **Note:** When using a half-inch printhead, select one of the nozzle rows or both for nozzle switching.

2.3.1 Pre-Purge

These settings enable pre-purge when print quality declines after printing for a period of time. The print quality starts to deteriorate when working in a hot and dry environment. In such an environment, the cartridge nozzles tend to dry out much faster than in normal environment conditions.

Pre-purge releases drop of ink from time to time keeping nozzles moist when cartridge is idle (in printing mode but no printing). Users can define the time cycle (when) to purge the nozzles as well as the level (amount of ink drops) used per each purge. Please refer to **Table 1-8**.

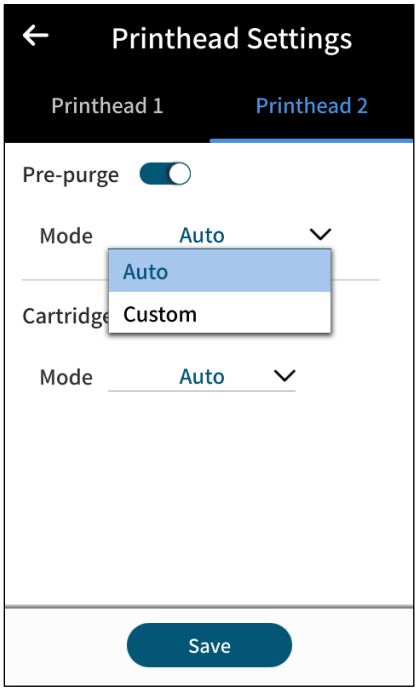


Figure 2-5. Printhead Settings — Pre-Purge

2.3.2 Cartridge Idle Alert

In Printhead Settings page, enable Cartridge Idle Alert to select its mode. Whenever the ink cartridge is idle and no matter which state (on or off) the printing function is, the counter will start to count cartridge idle time.

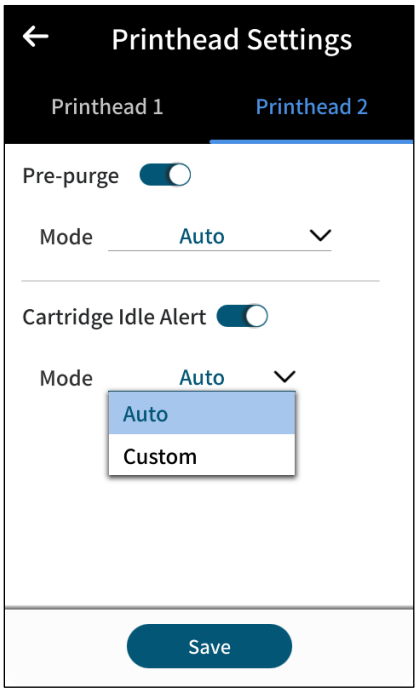


Figure 2-6. Printhead Settings — Cartridge Idle Alert

2.3.3 Stitching Alignment

When working with print stations in stitch mode, a full-height message is printed by dividing the content into two parts and assigning them to each of the printheads forming the stitch print station. It is during the initial setup that there could be issues with a message not being properly aligned.

To align the printheads and print a complete message, users can fine tune stitching alignment in A1 software.

a. Perform an initial test print to confirm stitching alignment status.

b. If there is a separation between the content, access printhead settings page and adjust the vertical or horizontal offset.

In homepage, use **Stitch "** **"** to access the settings page. Please see **Figure 2-7** below.

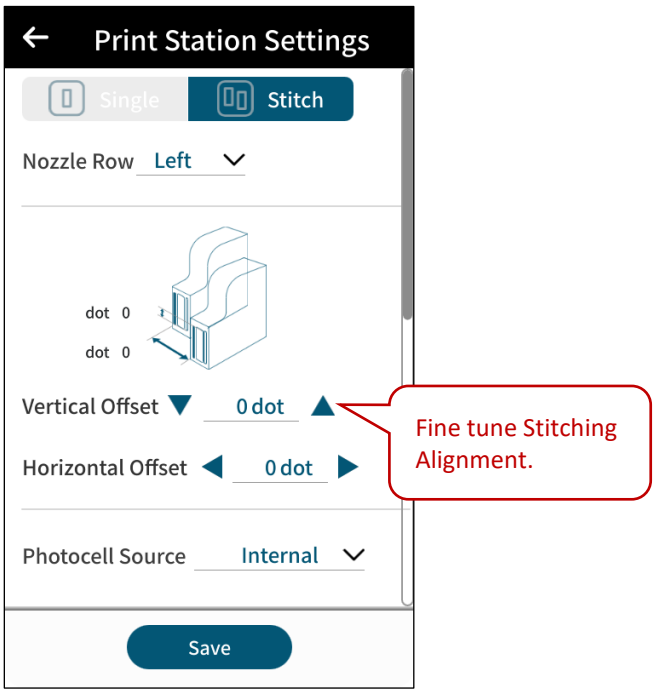


Figure 2-7. Printhead Settings — Stitching Alignment

2.4 Quick Edit

Printing related settings can be adjusted while a print station is in operation. Press **Quick Edit "** **"** in homepage to access Quick Edit settings page.

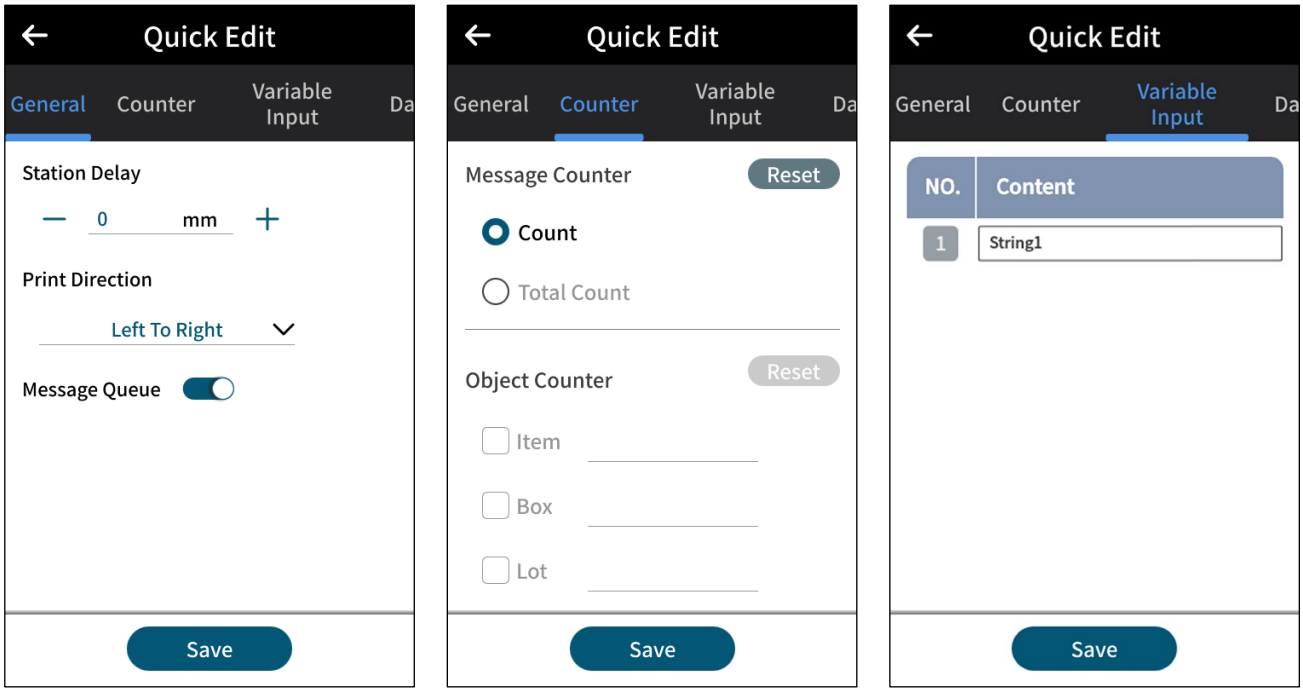


Figure 2-8. Quick Edit – General, Counter and Variable Input

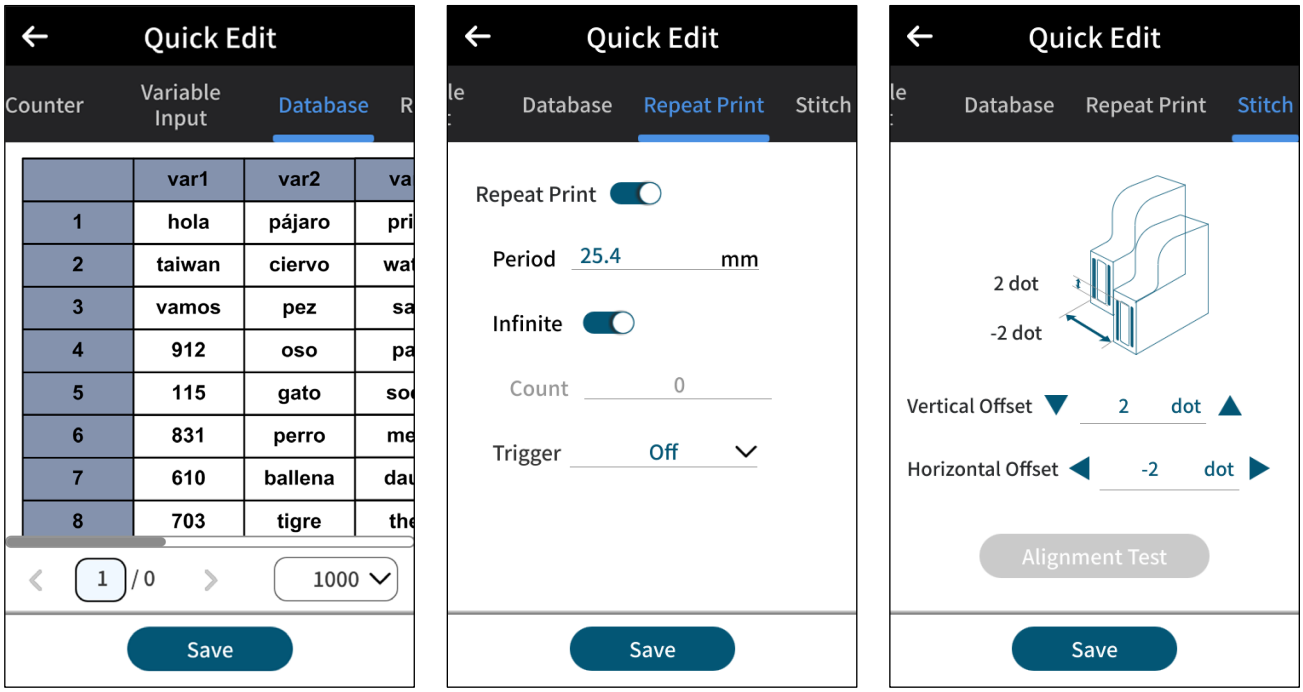


Figure 2-9. Quick Edit – Database, Repeat Print and Stitch

2.4.1 General

- **Station Delay:**
  - Both station delay can be adjusted simultaneously.
  - The delay is applied in the next print.
- **Print Direction:** Set print direction in the print station. Setting is applied after two prints.

2.4.2 Counter

All the options found in this tab are applied after two prints.

- **Message Counter:** Reset to zero information display count and total count parameters.
- **Object Counter:** Reset to zero in the start value for the counter objects within a message.

2.4.3 Variable Input

Update one or multiple variable objects contained within the printing message. It is used when users are only allowed to change parts of a message. Use together with changing the access level to achieve this purpose.

2.4.4 Database

After an excel file (.csv) is imported, select the row from which to start printing. This setting will be applied after two prints.

2.4.5 Repeat Print

Repeat print settings are applicable for applications where it is required to print the same content repeatedly a finite number of times or to continue printing while encoder motion is detected.

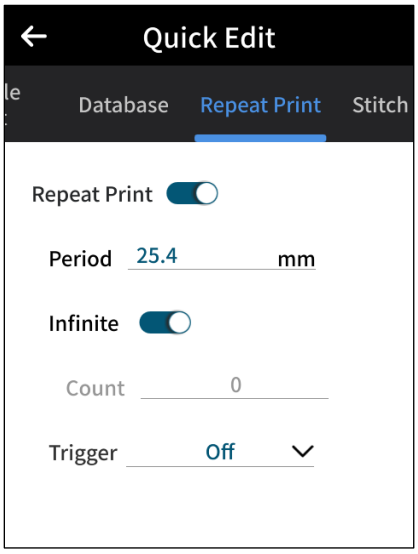


Figure 2-10. The Repeat Print Settings Page

For example, printing 10 times, 10mm after triggering the photocell sensor, and leave a gap of 20mm between each repetition:

Table 2-1. The Example of Repeat Print Settings

Parameter	Value
Period	20mm
Infinite	OFF
Count	10
Trigger	ON
Initial Delay	10mm

> **Note:** The period (20mm) refers to message width + message delay or station delay + 10mm tolerance + physical printhead width 33mm (stitch mode only). Period value must be greater than total width of the printing content.

In repeat printing, set an initial delay value to the beginning of the first print in the repetitions after the sensor being triggered. Initial delay has top priority over message and print station delays.

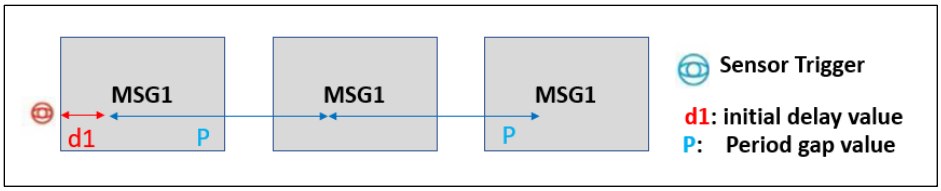


Figure 2-11. Repeat Print – Initial Delay

2.4.6 Stitch

Please refer to **Section 2.3.3 Stitching Alignment** for detailed settings.

3 A1 Operation

3.1 Usage of the Variable Object

A1 printer system enables users to set their own variables, such as company names, addresses, URL, product numbers, etc. For application required to quickly replace specific content of the message without modifying the whole message layout, “Variable” is the right object to be used. Variable objects can also become the content source to a barcode object, please see the below figure to understand the structure.

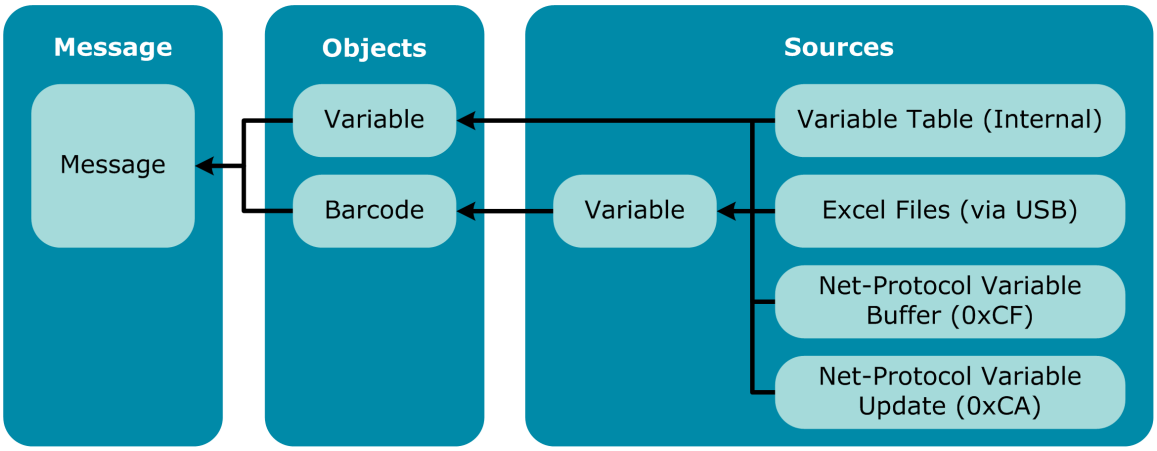


Figure 3-1. Variable Message Sources Diagram

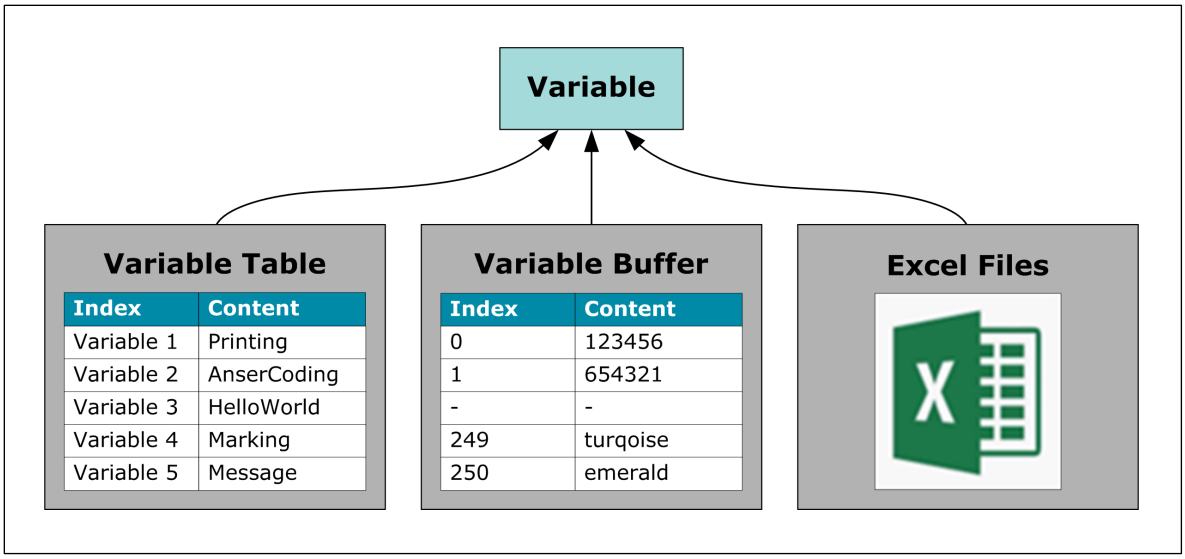


Figure 3-2. Variable Input Sources Diagram

Table 3-1. Variable Input Methods

	Variable Table	Variable Buffer	Excel Files
Methods to Edit	1. PC Software (Message Pro X) 2. Printer UI 3. Net Protocol over Ethernet (0xCA) 4. USB	1. Net Protocol over Ethernet (0xCF, 0xCB, 0xCC)	1. PC Software (Message Pro X)
Note	Variable source setup as “Default”.	Variable source setup as “External”.	Variable source setup as “Database”.

3.1.1 Internal Variable Table

There is a total of 20 variables per table that can be defined and kept in an A1 printer. Each of the variables can hold up to 100 alphabets (100 bytes). Message editor is full Unicode supported in UTF-8 format.

3.1.2 Excel Files or Database

Variable objects are able to take imported .csv file extensions as a source. When a print job starts, users have the option to preview and choose which entry or row they would like to start.

3.1.3 Data Update Using Communication Protocol (0xCA)

The CA command updates the internal **Variable** table. The data updated by the CA command can be printed as many times as customers want before the next CA command are received.

3.1.4 Data Stream Using Communication Protocol (0xCF)

Unlike the CA command, the CF command uses a variable First in First Out (FIFO) buffer. Therefore, the variable data by CF command can only be printed once and will be removed from the buffer after printing is completed.

The size limitation of a single variable is also 100 bytes long, and the size of the buffer is 250.

3.1.5 Data from USB

The option of “Save to the internal table” will make the data written to the variable table and can be printed as many times as users want before the next overwrite.

It supports to connect devices such as USB barcode scanners. With the USB settings, users can manage the data coming from this USB COM port. For a set of stream data, set the position and the length of the data needed for printing.

Navigate to **Menu “** **” > Device Configurations “** **” > External Devices > Scan Selector > Scan&Print**:

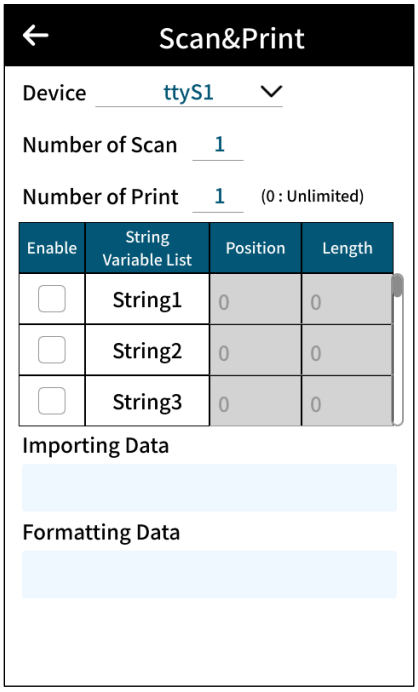


Figure 3-3. The Scan and Print Page

3.2 Format Preferences

Navigate to **Menu "** **" > Settings "** **" > Template > Format Preference Template**. To create custom inputs for each month of the year, please refer to **Table 3-2** below.

3.2.1 Customized Month

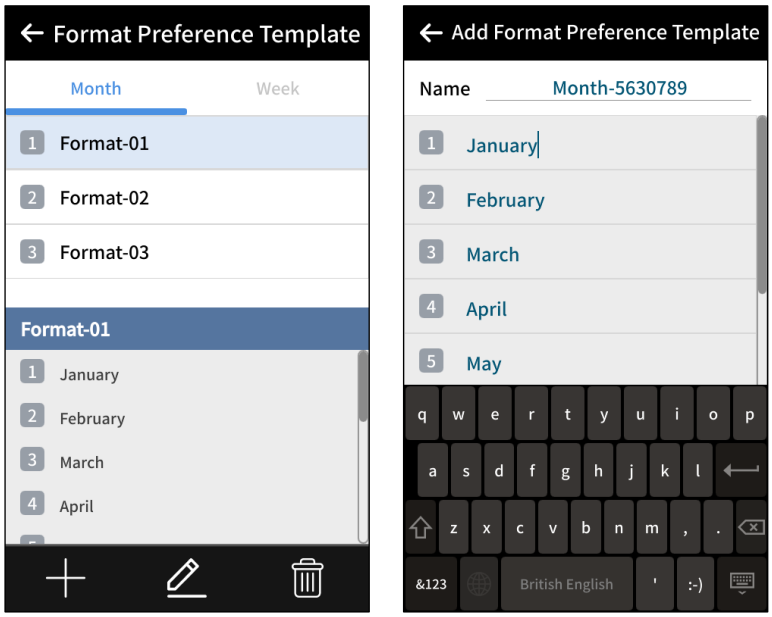


Figure 3-4. Add Format Preference Template Page

Table 3-2. Customized Inputs

Month	Letters	Arabic	Spanish
January	AA	كانون الثاني	Enero
February	BB	شباط	Febrero
March	CC	آذار	Marzo
April	DD	نيسان	Abril
May	EE	أيار	Mayo
June	FF	حزيران	Junio
July	GG	تموز	Julio
August	HH	آب	Agosto
September	II	أيلول	Septiembre
October	JJ	تشرين الأول	Octubre
November	KK	تشرين الثاني	Noviembre
December	LL	كانون الأول	Diciembre

3.3 Export and Import Data

There are two ways to export and import data from the A1 system, and it can be done either in the **About** page or in the **Files** page.

3.3.1 About Printer

- Insert a flash memory into USB port.
- Press the **Import/Export** button " ".
- Choose the action to import or export and select the USB.
- Exporting creates a backup copy of all the information contained in the printer.

> **Note:** When exporting, the system creates a main directory as "Backup_xxxx" containing folders for all types of files found in the system.

3.3.2 File Management

File Management can export and import one or multiple types of files such as messages, images, fonts, etc.

To Export

STEP 1: Select the files to export from the file manager.

STEP 2: Press the **Export** button, and select the USB directory to export.

> **Note:** When exporting, files are exported to the directory “File_Management_xxxx”.

To Import

STEP 1: You will need a system file directory that can be generated through the **Export** operation mentioned previously. After exporting, put one or multiple files under the corresponding subfolder, e.g., excel, font, logo....

STEP 2: Insert USB into the USB port, click **Import**, and double-click the directory to locate the files to be imported, such as “Backup_xxxx” or “File_Management_xxxx”.

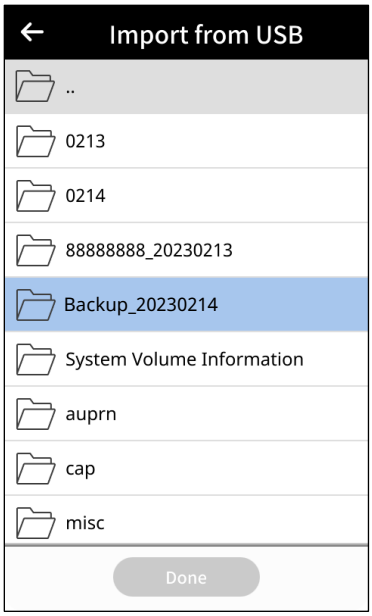


Figure 3-5. Import from USB (1)

STEP 3: Double-click the file folder and the directory tree will show up.

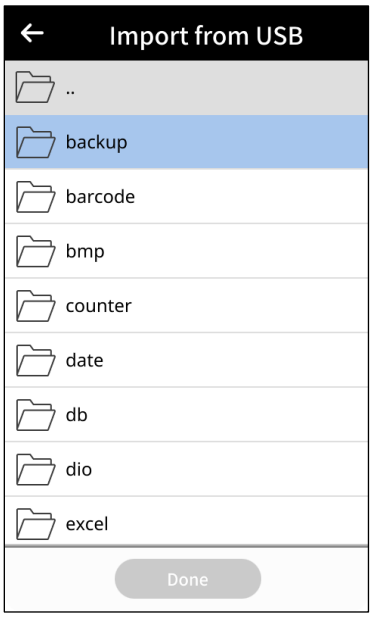


Figure 3-6. Import from USB (2)

STEP 4: Select the files you want to import and press **Done**.

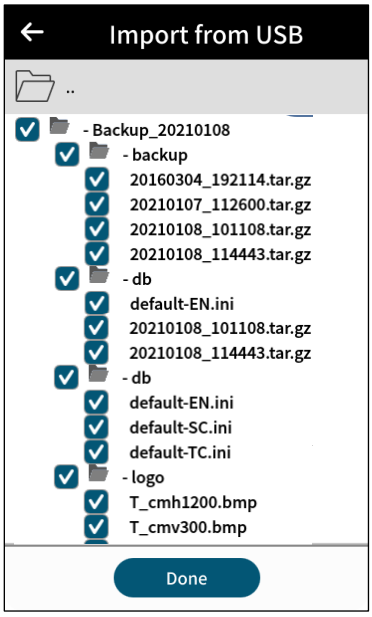


Figure 3-7. Import from USB (3)

3.4 File and System Backup

To back up all system information on A1, be sure to insert a FAT32 format USB before starting the backup.

Access **Menu “** **”** **> Settings “** **” > About**, and press **Restore & Backup “** **”** below to see the list of available backup copies. To back up the system, press the **Backup “** **”** button. To restore from existing copy, select a file and press **Restore “** **”**.

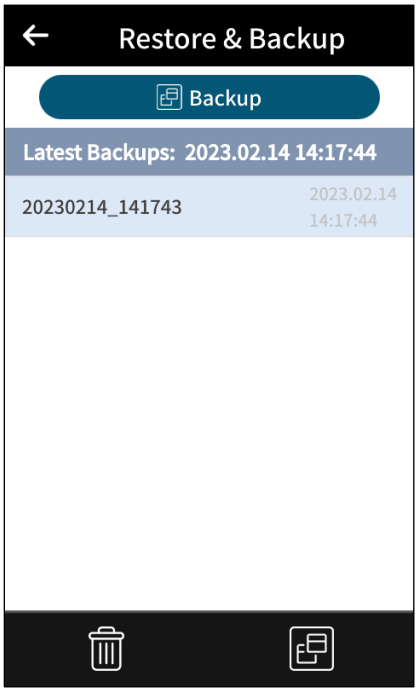


Figure 3-8. The Restore & Backup Page

3.5 I/O Management

I/O Management is a module to manage and perform automation and integration with external systems such as PLC. The module allows the creation of events based on an available list of monitorable events. Execution of events can be linked to actions that will be automatically triggered upon the event being true.

Use **Menu “ ” > Device Configuration “ ” > External Devices > I/O**.

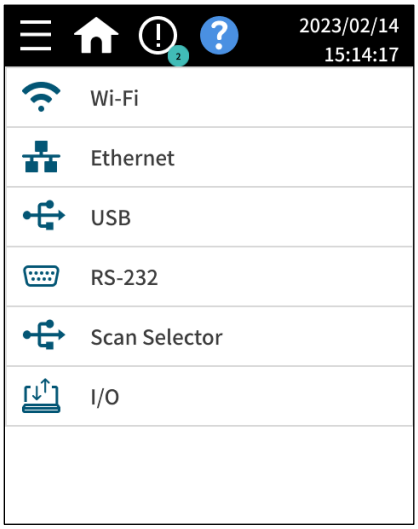


Figure 3-9. External Devices Page

3.5.1 I/O Assign

In I/O Assign, users can find all the events/actions that have been created. Here users can execute the following I/O functions.

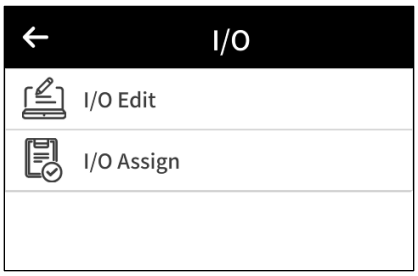


Figure 3-10. I/O Management Page

3.5.2 I/O Edit

Enter I/O Edit page as the folloing figure shows.

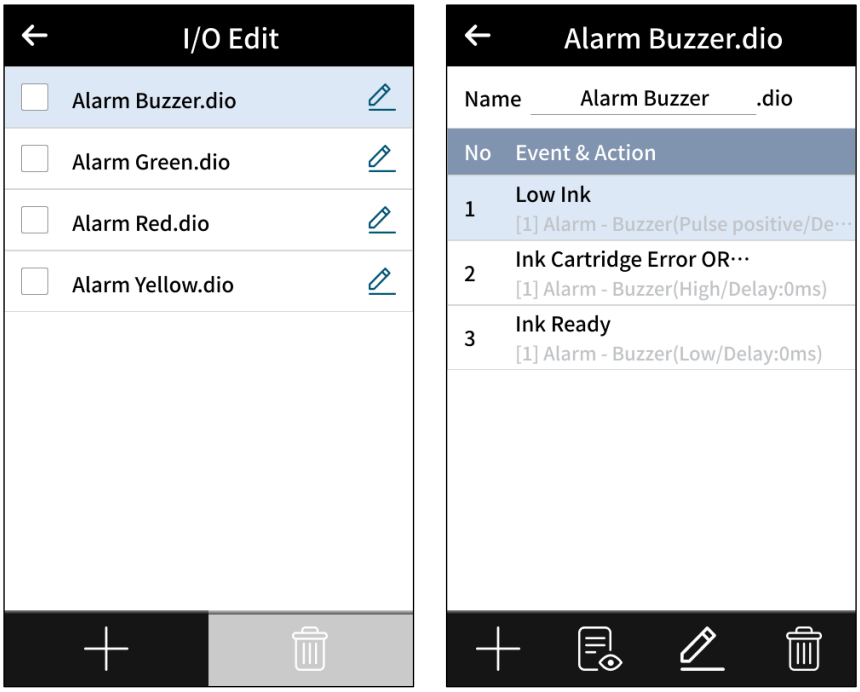


Figure 3-11. I/O Edit Settings Page

Press **Edit "** **"** to enter event edit page.

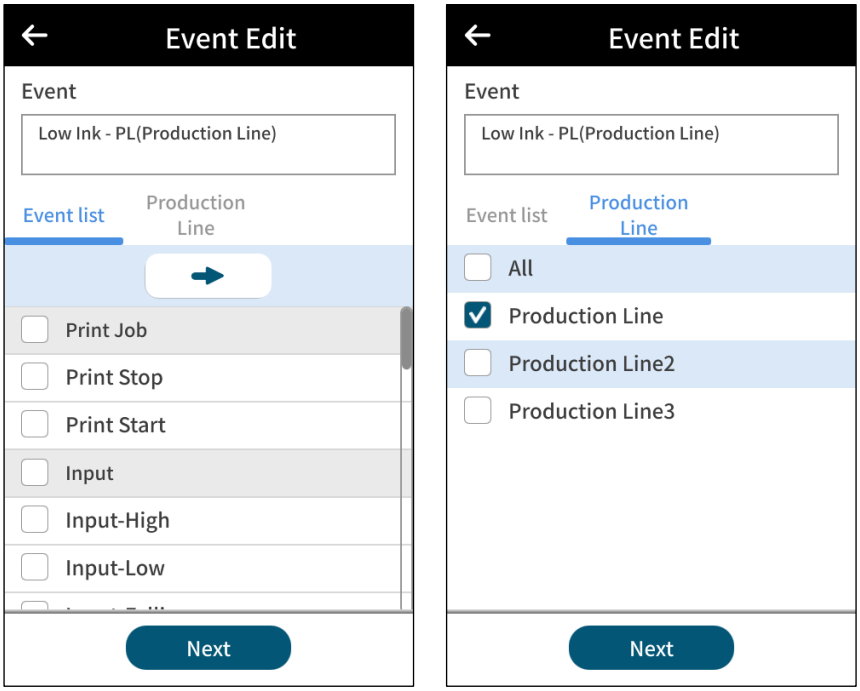


Figure 3-12. I/O Edit – Event List (1)

An event is a condition or status that will trigger certain action. In I/O management, events include digital signal input, warnings and status alarms. Events can be logically combined in “AND”, “OR”, or “XOR” logic.

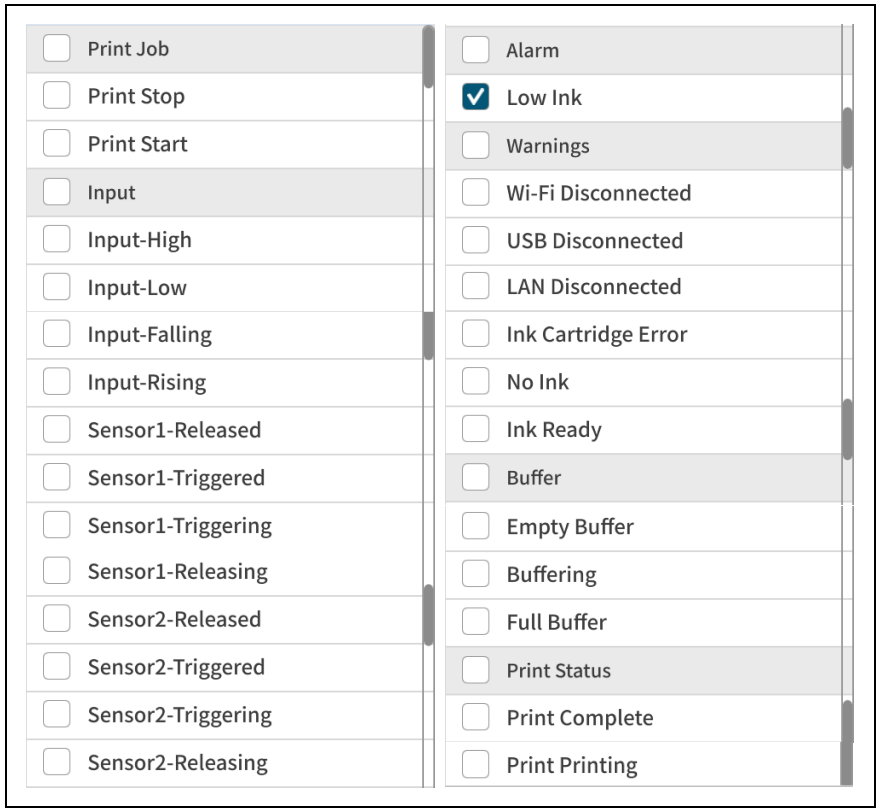


Figure 3-13. I/O Edit – Event List (2)

Table 3-3. I/O Edit – Event List Definition

Event	Definition
Print Job	- **Print Stop:** To monitor if printing has stopped. E.g., pressing **Stop** button. - **Print Start:** To monitor if printing started. E.g., pressing **Start** button.
Input	A1 M8 8-pin port, pin #8 (DIN). Please refer to *A1 Technical Specifications V0.1*. - **Input High:** To monitor if input signal is high level. - **Input Low:** To monitor if input signal is low level. - **Input Falling:** To monitor input signal transition from high to low. - I**nput Rising:** To monitor input signal transition from low to high. - **Sensor1-Released:** To monitor if printhead-1 photocell is released. - **Sensor1-Triggered:** To monitor if printhead-1 photocell is blocked. - **Sensor1-Triggering:** To monitor if printhead-1 photocell is blocking. - **Sensor1-Releasing:** To monitor if printhead-1 photocell is releasing. - **Sensor2-Released:** To monitor if printhead-2 photocell is released. - **Sensor2-Triggered:** To monitor if printhead-2 photocell is blocked. - **Sensor2-Triggering:** To monitor if printhead-2 photocell is blocking. - **Sensor2-Releasing:** To monitor if printhead-2 photocell is releasing.
Alarm	**Low Ink:** Monitor if a cartridge has reached low ink level.
Warning	- **Wi-Fi Disconnected:** To monitor if Wi-Fi connection is lost. - **USB Disconnected:** To monitor if USB is unplugged. - **LAN Disconnected:** To monitor if LAN cable is unplugged. - **Ink Cartridge Error:** To monitor if a cartridge is in one of the following status – ▸ Disc chip errors. ▸ Gate not closed. ▸ No cartridge inserted. ▸ Wipe alert. - **No Ink:** To monitor if a cartridge is empty. - **Ink Ready:** To monitor if a cartridge ink volume is normal and ready to print.
Buffer	- **Empty Buffer:** To monitor if the external buffer is empty. - **Buffering:** To monitor if the external buffer has data. - **Full Buffer:** To monitor if the external buffer is full.
Print Status	- **Print Complete:** To monitor if print job completes. - **Print Printing:** To monitor if the printer is in printing status.

Table 3-4. I/O Edit – Logical Operand Definition

Parameter	Definition
AND	AND is a logical operand where an A event and a B event both become “TRUE”; In other words, it is the logical conjunction of the selected events.
OR	OR is a logical operand where either an A event or of a B event become “TRUE”; In other words, it is the logical (inclusive) disjunction of the selected events.
XOR	XOR is a logical operand where an A event is “TRUE” and a B event is “FALSE” or an A event is “FALSE” and a B event is “TRUE”; In other words, it is the logical exclusiveness of the selected events. (Exclusive disjunction.)

Please refer to the following table for the action that is triggered when events are true.

Table 3-5. I/O Edit – Action List

Action	Definition
Print Job	- **Print Stop**: Stop production line. - **Print Start**: Start production line. - **Purge**: Enables pre-purge printhead settings. - **Reset Counter**: Reset object message counters (item, box and lot).
Output	A1 alarm port (M8 6-pin). Please refer to *A1 Technical Specifications V0.1*. - **Alarm Green:** Set the output pin #6 signal status. - **Alarm Yellow:** Set the output pin #4 signal status. - **Alarm Red:** Set the output pin #2 signal status. - **Alarm Buzzer:** Set the output pin #5 signal status.

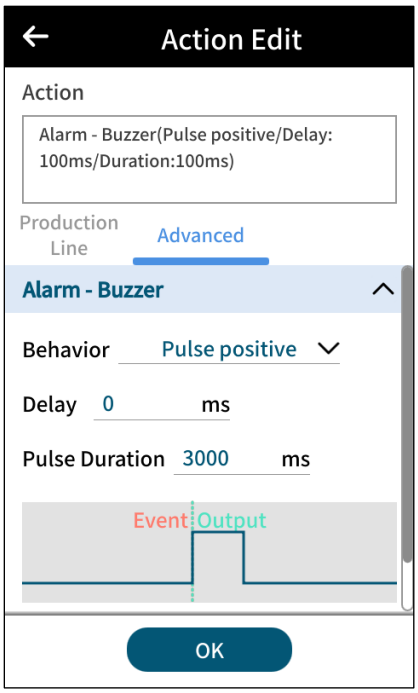


Figure 3-14. Action Settings – Digital Output

3.5.3 Advanced Action Settings

It is possible to set different behavior for each digital output signal.

- **Level High:** Set the output signal to high. It will remain high until another action changes the status.
- **Level Low:** Set the output signal to low. It will remain low until another action changes the status.
- **Pulse Positive:** Increase the output signal.
- **Pulse Negative:** Decrease the output signal.
    - **Delay:** Set a delay in milliseconds before executing the digital output behavior.
    - **Pulse Duration:** Set a time duration for the positive or the negative pulse options.

4 Troubleshooting

4.1 Fault Messages and Warnings

4.1.1 Ink Cartridge Fault

Table 4-1. Ink Cartridge Fault and Description

Fault	Description
No Cartridge	It normally happens when no cartridge is detected. Additionally, this could happen when chip failure or abnormal cartridge latch happens.
Ink Type Not Supported	The ink type is not supported in the current software version or printer model.
Ink Capacity Not Supported	Ink cartridge volume is not supported in the current software version or printer model.
Ink Color Not Supported	The ink color is not supported in the current software version.
Ink Empty	Ink cartridge is empty. Please change a new cartridge.
Ink Low	The ink level is low (with 5% left) or lower than the custom trigger value.
EDC Not Match	Either the country code, area code or both codes don’t match printer EDC.

4.2 Status Definition

4.2.1 UI Icon Status

Table 4-2. UI Icon Status Definition

Device	Connected	Error	Error Event
Cartridge			Click the icon to show error message dialog, to see cartridge information and error codes.
Wi-Fi			Click the icon to show error message dialog and open Wi-Fi setting page.
Ethernet			Click the icon to show error message dialog and open Ethernet setting page.
USB			Click the icon to show error message dialog.

4.2.2 UI and Warning Light

Table 4-3. UI and Warning Light Definition

PL Status	UI Display	Light	Buzzer	Trigger Condition	To Exit Status Condition
Idle	Gray	Off	Off	Not printing / Stop printing	Start printing
Printing	Green	Green	Off	Start printing	- Stop printing - Error - Empty
Ink Low	Yellow	Yellow	Beep 3s	1. Reach threshold. 2. Start with a low ink cartridge. 3. Insert the low ink cartridge.	Insert cartridge ink level over the threshold.
Ink Empty	Red	Yellow	-	Printed all available ink dots.	Insert the cartridge with enough ink to print.
Error	Red	Red	-	DISC related: 1. Can’t read DISC. 2. EDC error. 3. Can’t recognize DISC. 4. No legal DISC. 5. Ink type not supported. 6. Cartridge latch is not closed. 7. Wiping reminder time up.	When the trigger condition is released.

4.2.3 Printer LED Status

Table 4-4. Printer LED Status and Definition

Event	LED Action			Note
	Green	Yellow	Red	
Power ON	ON	OFF	-	-
Power OFF	OFF	OFF	OFF	-
Printing	Flashing	OFF	-	-
Ink Low	-	ON	-	-
Cartridge Error / Ink Empty	ON	OFF	ON	No cartridges or the country code / area code does not match.
Top Cover / Cartridge Latch Open	ON	OFF	ON	-

Appendix

Printer Maintenance

- Before powering up, make sure all the components are connected.
- Before shutting down, please remove the cartridge, and shutdown system from UI shutdown button, and then press the power switch behind the printer prior to disconnecting any of the components.

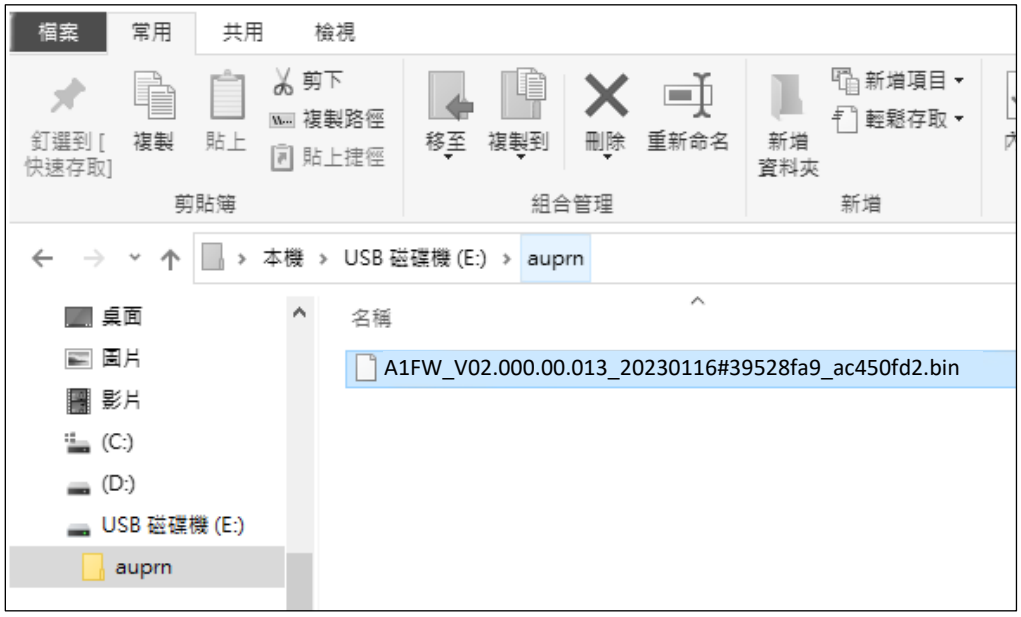
Printer Firmware Upgrade

A1 software can be upgraded by USB.

STEP 1: Before it starts, please make sure that the USB is formatted as FAT32 and the size of the partition is under 32GB.

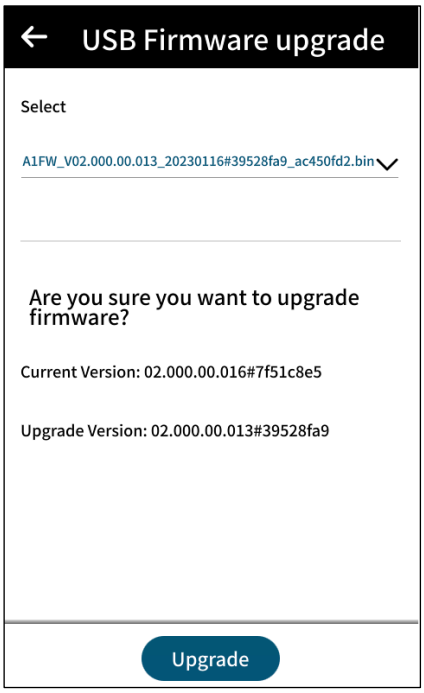
STEP 2: Create a new folder within the USB and name it as **auprn**.

STEP 3: Copy the software upgrade file into the USB://auprn folder.



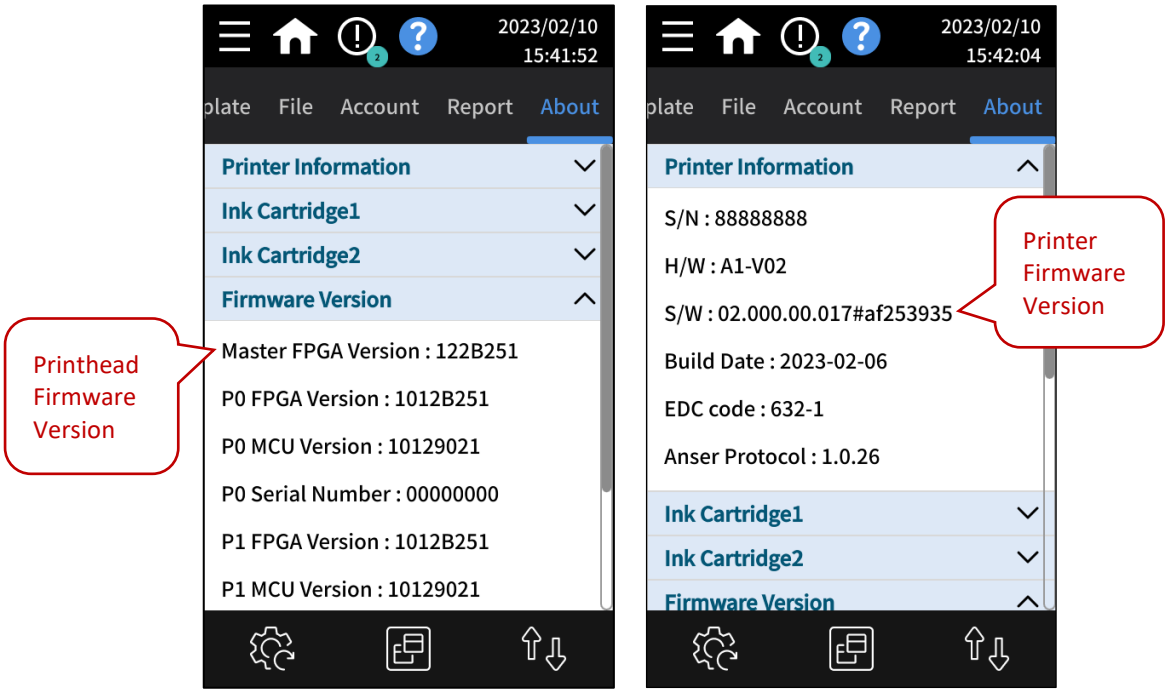
> **Note:** Please remove ink cartridge(s) before firmware upgrade for A1 printer.

STEP 4: Insert the USB in USB port and wait for the upgrade confirmation message to show up.



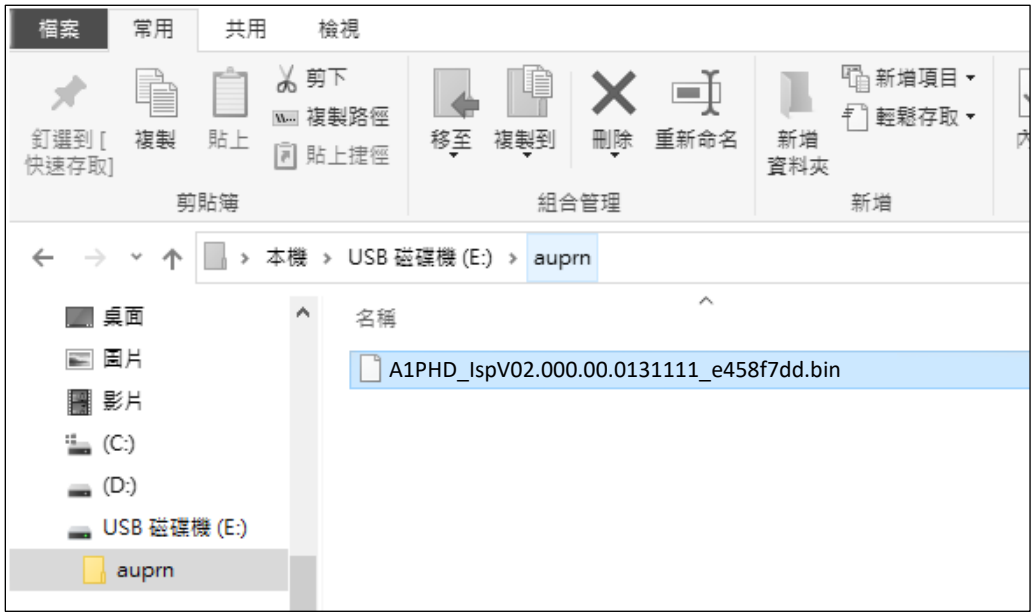
STEP 5: Press **Upgrade** to initiate the process.

STEP 6: A1 will reboot automatically once the upgrade process is completed. Please go to **Menu > Settings > About** to confirm the firmware versions of printer and of printhead are both updated.



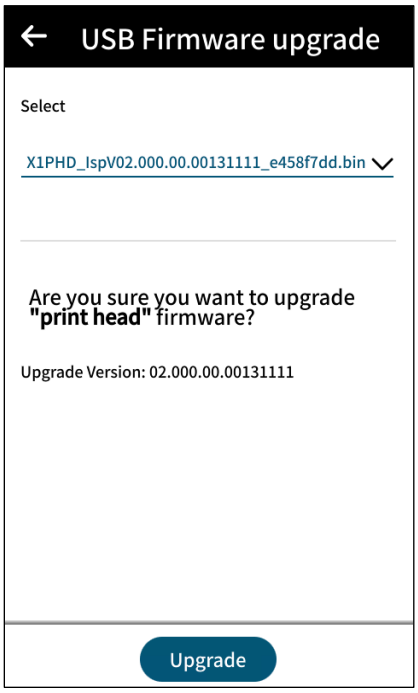
Printhead Upgrade

STEP 1: Copy the printhead upgrade file into the **auprn** directory, and make sure only this file is in the directory.

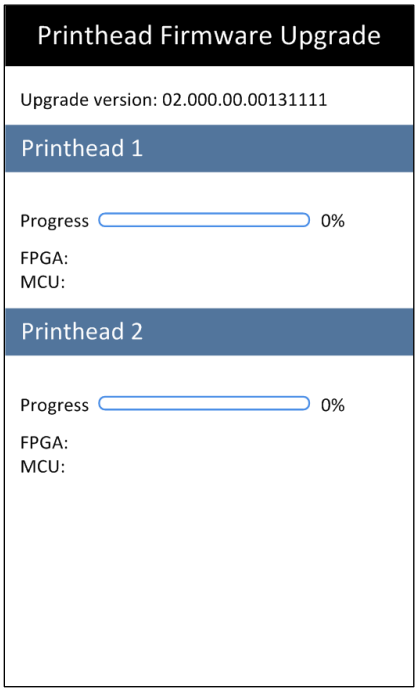


> **Note:** Please remove ink cartridge(s) before A1 printhead upgrade.

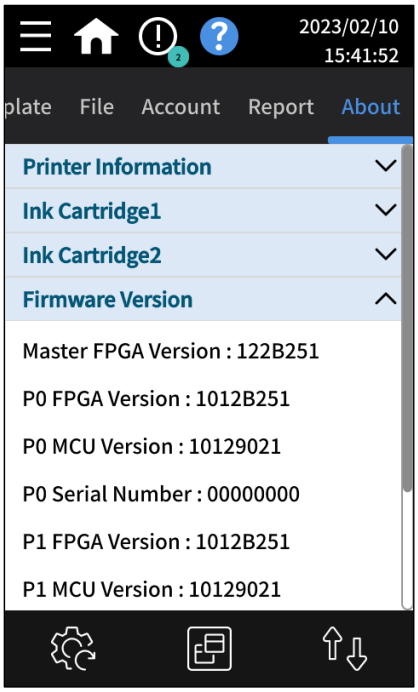
STEP 2: Insert the USB to the printer, and wait to confirm the prompt window.



STEP 3: Wait for the process to be completed and it might take several minutes. When done, please press **Exit** and then **Yes** to exit the printhead update mode. It will go back to login page.



STEP 4: Go to **Menu > Settings > About Printer > Firmware Version**, and P0 & P1 FPGA should be shown.



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