

# Software Manual

Your guide to the StatLab  
**PiSmart S1 Slide Printer**  
**PISMART-S1**



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## Introduction

All PiSmart printers are network-enabled and designed for seamless integration into laboratory workflows. This guide provides detailed instructions for setup, configuration, user management, internal label design, and general operation of the PiSmart S1 Slide Printer.

## How to Use This Manual

Use the Table of Contents to navigate to relevant sections. Follow the steps for procedures and look for callouts like:

 **Warning:** Indicates actions that may result in the loss of data.

 **Tip:** Helpful suggestions for best practices.

 **Important:** Specific information may be required.

## Getting Started


### Unboxing and Setup

- Check that all components are included.
- Ensure the power switch located on the back of the printer is in the OFF position.
- Connect the power and USB or network cables (if applicable).
- Place the printer on a flat, stable surface.
- Plug the power cord into the printer and mains supply.

### Powering On

- Switch the power button to the ON position at the back of the unit. Within a few seconds, the display on the front of the printer should illuminate.
- The printer will automatically reset all motors as part of its initialization process.
- Any errors encountered during initialization will be displayed on screen.

 **Tip:** Refer to the PiSmart S1 Slide Printer Operator Guide.

 **Tip:** You can scroll the screen by touching and holding using a stylus or finger, then swiping up or down. Alternatively, use the up and down arrows where present.

## Connecting Devices to The Printer

Two USB A ports on the back of the printer can be used much like USB ports on PCs or laptops. Some devices can be used when plugged into these ports.

These include:

- USB sticks (thumb drive).
- External barcode scanners (Zebra model scanners only).
- Wired keyboards (any model or type).
- Wired mouse (any model or type).
- Wireless Keyboards (any model or type).
- Wireless mouse (any model or type).
- Wireless combination set, keyboard and mouse (any model or type).
- Wireless barcode scanners (Zebra model scanners only).

**⚠ Note:** Performance may vary by keyboard or mouse model.

**💡 Tip:** When connecting or disconnecting a device, the printer should be powered OFF.

One RJ45 port on the back of the printer can be used for connection to networks.

These methods of connection to networks include:

1. Ethernet cable connects the printer to a standard Network ethernet port.
2. Ethernet to Wi-Fi adaptor. Standard adaptors can be found on most internet sites that sell networking devices. Follow the manufacturer's instructions for connection.

One USB B port on the back of the printer can be used for PC connection. A standard USB-A to USB-B 2.0 Cable is supplied with PiSmart printers.

## Creating The First User

### Guest User Access

All new PiSmart printers are shipped with a **Guest User** account to allow basic access during initial setup and printing.

### Guest User Permissions

The Guest User has limited access and can perform the following actions:

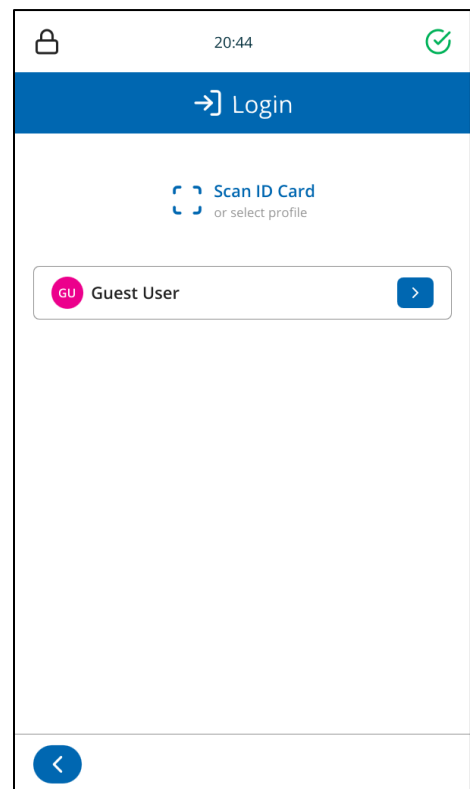
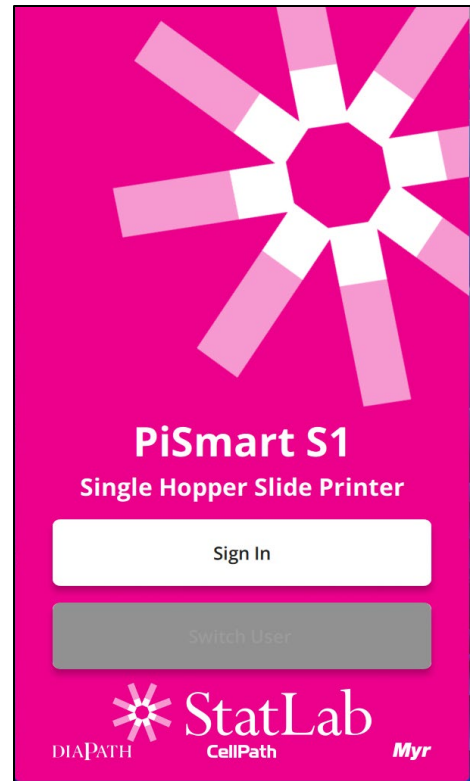
- Print from the main screen.
- Change the display language.
- Create an Admin User (only the first admin user).

### Signing in as Guest

To access the printer as a Guest User:

- Press the **Sign In** button.
- Press the **Guest User** button.

The main printing screen will be displayed.



## Creating an Admin User

It is **strongly recommended** to create an Admin User before proceeding with any other printer operations.

### To create the first Admin User:

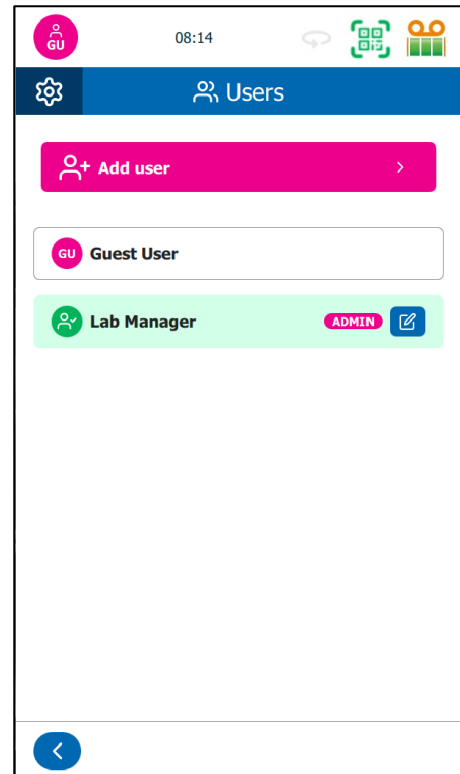
1. Press the **Settings** button.
2. Select **Users**.
3. Press the **Add User** button.
4. Press the **Edit** icon next to each field to enter user information.
5. Press **Add User** to save.

### After creating the Admin User:

- Log out of the printer.
- Sign In using the newly created Admin User credentials.

Once signed in as the Admin User, full access to all programming and configuration menus will be available. Create additional users as needed; user access to function can be restricted by toggling the Admin option when creating a user.

The screenshot shows the 'Add new user' interface. At the top, there's a status bar with a 'GU' icon, the time '08:11', and some utility icons. Below that is a blue header with a gear icon and the text 'New User'. The main area contains several input fields: 'First name' with the value 'Lab', 'Last name' with 'Manager', 'PIN code' with '0000', and 'Scan code' with '...'. Each field has a blue edit icon to its right. Below the fields are two toggle switches: 'Admin' (ON) and 'Auto login' (ON). At the bottom, there is a blue back arrow on the left and a blue 'ADD USER' button on the right.



## Signing In and Logging Out

The printer has two options for signing in.

**Sign In** is available when no user is currently signed into the printer.

**Switch User** is available when a user has signed into the printer but has locked the screen. This user is still considered signed into the printer but does allow for a different user to operate the printer.

To **Sign In** to the printer:

1. From the Sign In screen, press the **Sign In** or **Switch User** button.
2. If required, select the user that will be Signed In.
3. If required, type in the passcode.

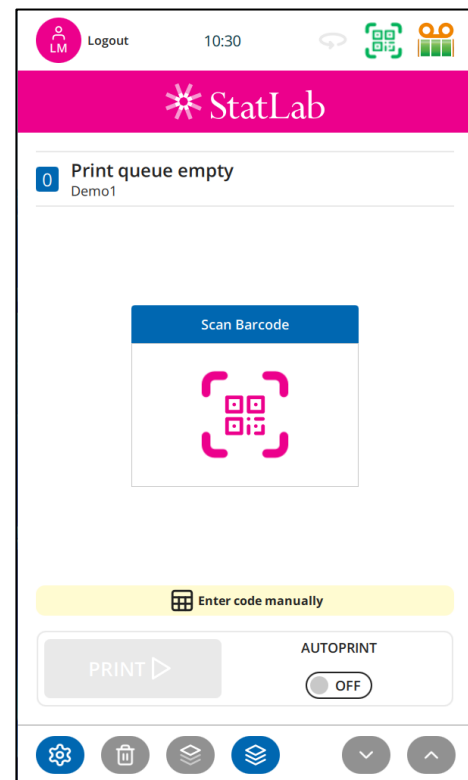
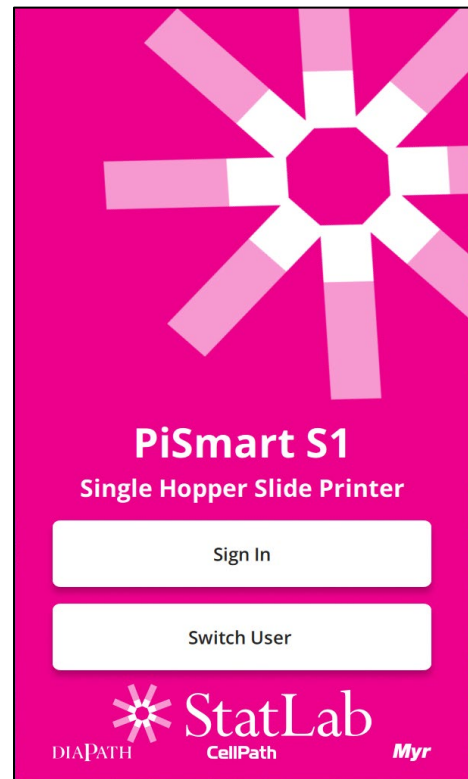
The printer has two options for logging out of the printer.

**Lock Screen** becomes available when the Log Out button is pressed and should be used if the current user wants to prevent the printer from inadvertently being used by another user while away from the printer.

**Log Out** should be used to completely log a user out, such as when they are finished using the printer for the day.

To **Lock Screen** or **Log Out** of the printer

1. From the Main Printer Screen.
2. Press the Log Out button at the top left edge of the main screen.
3. Select Log Out or Lock Screen.




# Printer Configuration

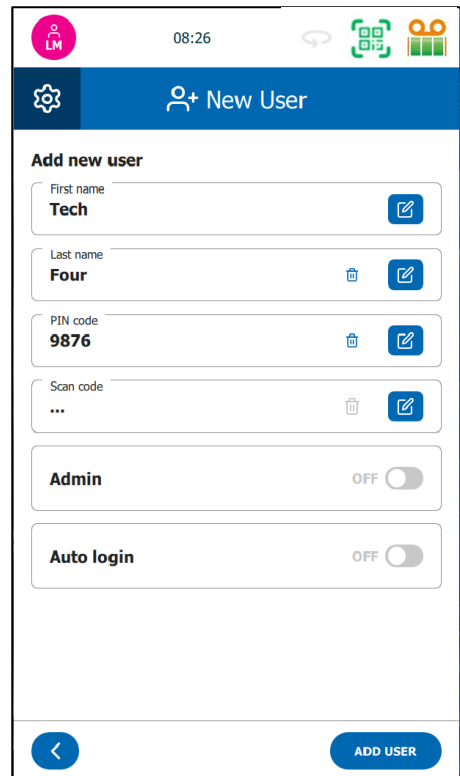
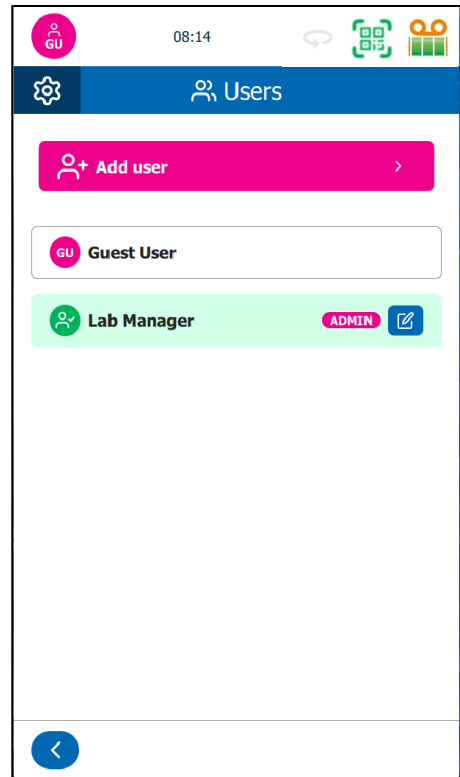
## User Management

### Create a New User

1. Press the **Settings** button.
2. Press **Users**.
3. Press **Add User**.
4. Enter:
  - First Name (required)
  - Last Name (optional)
  - PIN Code (optional) Pin Code can be up to six numbers. (numerals only)

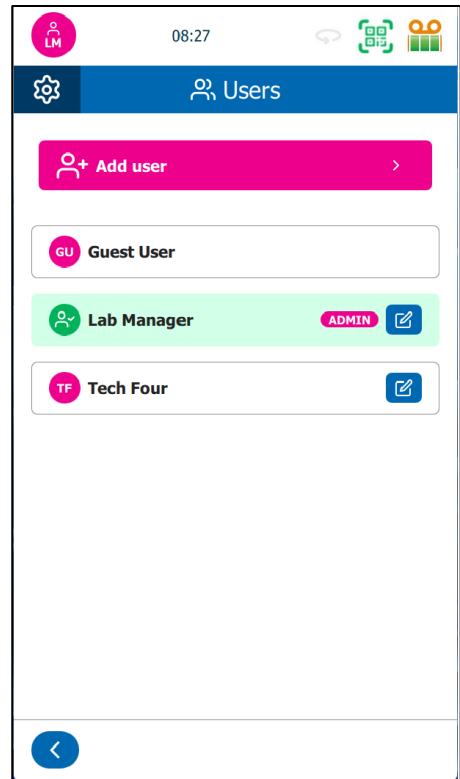
 **Tip:** To enable sign in without a PIN Code, leave PIN code blank.

- Admin User (optional)
  - Set Scan Code (optional) This can also be scanned in.
  - Admin (optional)
  - Auto Login (optional)
5. Press **Add User**.



## Edit an Existing User

- From the **Users** menu, Press the **Edit** button next to the user.
- Update information as needed.
- Press **Set** to save individual changes.
- Press **APPLY** to save the updated information.



## Access Levels & Auto Login

| Role   | Add Users | Edit Printer Setup | Access Settings |
|--------|-----------|--------------------|-----------------|
| Admin  | ✓         | ✓                  | ✓               |
| Normal | ✗         | ✗                  | Limited         |
| Guest  | Limited   | ✗                  | Limited         |

## Service Log In

Access to the printer's service menu is restricted to authorized service personnel. To log in, a special USB key must be inserted into the printer. Once inserted, the service USB key grants access to the service menu and overrides standard user-level settings.

## Applications Log In

The Applications team is provided with special access to the printer's full menu system. This access is enabled by inserting a designated Applications USB key into the printer. When used, the USB key unlocks full menu access and overrides standard user-level settings.

## Auto Login

The Auto Login feature is intended for laboratories that prefer not to use the standard User Login feature. When Auto Login is enabled for a user, no passcode is required at the Sign In screen. Selecting this user will automatically navigate to the printing screen.

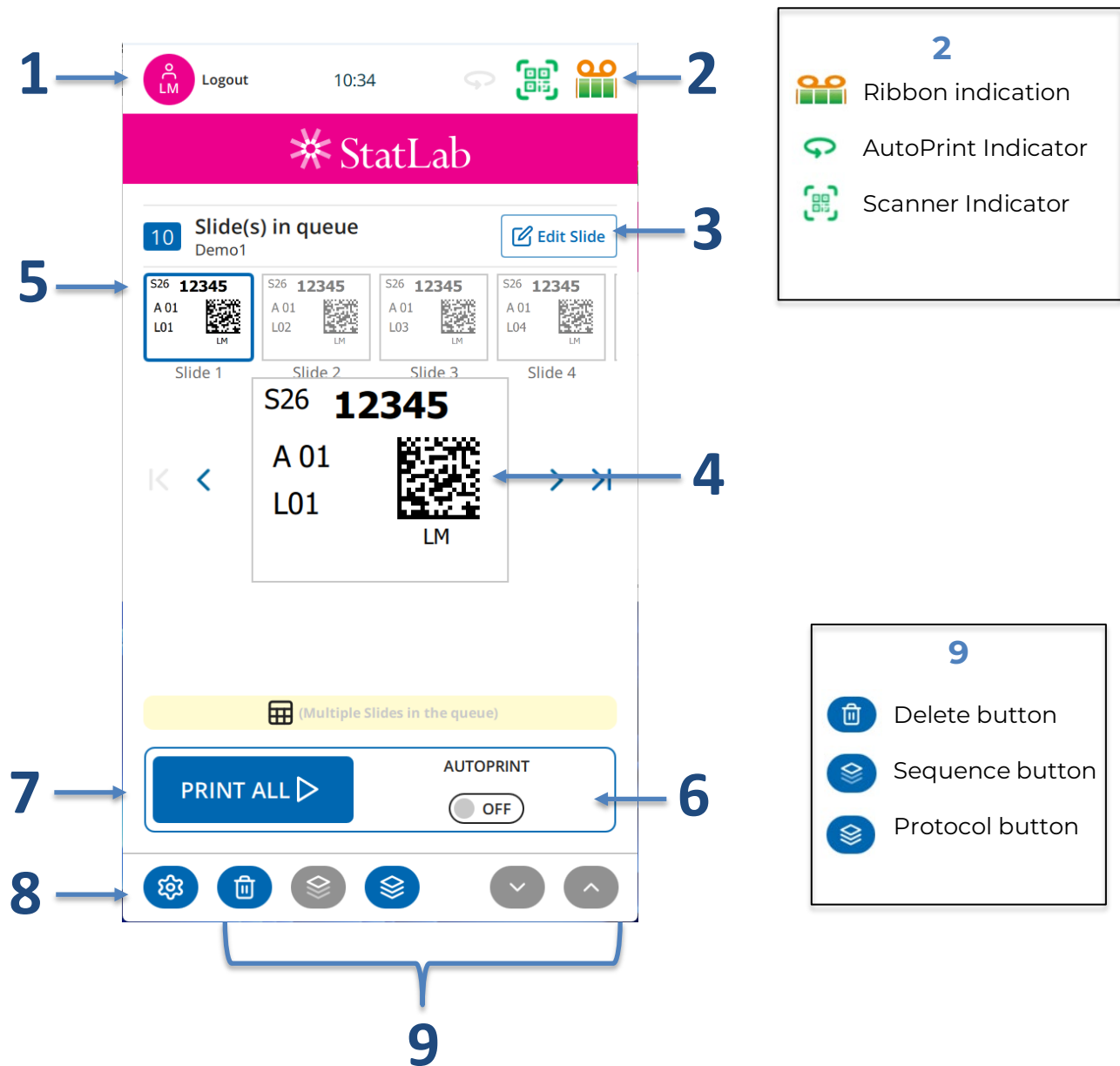
Only one user can be assigned Auto Login. Enabling Auto Login for a different user will automatically disable it for the previously assigned user.

**⚠ Warning:** Auto Login will skip the Sign In screen for the designated user.

## Main Printer Screen

The **Main Printer Screen** is the central interface for daily Slide printing. It provides access to key functions, a live preview of the Print Queue, and Basic Settings.

### Screen Layout and Features



| Element                                | Description  |
|--|--|
| <b>1. User Info &amp; Logout</b>       | Displays the current user (Guest or Admin). <b>Press</b> to log out or switch users.   |
| <b>2. Status Bar</b>                   | Indicates the printer status (Filter life, Ready, Printing, Error) and displays any warnings.  |
| <b>3. Print Queue and Slide Editor</b> | Displays the number of Slides in the print queue. Pressing 'Edit Slide' allows editing to the current Slide.   |
| <b>4. Slide Preview Area</b>           | Displays a preview of the Slide layout before printing, allowing you to confirm content and formatting.  |
| <b>5. Print queue</b>                  | Displays print jobs in the queue.  |
| <b>6. Sample ID Input Field</b>        | Displays the input data received by the printer. Data can be captured via barcode scanning or manually entered before printing.  |
| <b>7. Print Button</b>                 | <ul style="list-style-type: none"> <li>• <b>PRINT</b> will be displayed when there is one print job in the queue.</li> <li>• <b>PRINT ALL</b> will be displayed when multiple print jobs are in the queue.</li> <li>• When <b>AUTOPRINT</b> is OFF, the selector will be grayed out, and the top of the Slide face will appear Blue.</li> <li>• When <b>AUTOPRINT</b> is ON, the selector and the top of the Slide face will turn green, and printing will start automatically. While printing, a green Stop button will appear. Pressing Stop will halt the printing process at the next convenient point.</li> </ul> |
| <b>8. Settings Shortcut</b>            | <p>Quick access to general settings (limited access for non-admin users).</p> <p>The trash can icon deletes print jobs.</p> <ul style="list-style-type: none"> <li>• Press once to delete <b>ONE</b> print job.</li> <li>• Press and hold to delete <b>ALL</b> print jobs.</li> </ul>  |
| <b>9. Dynamic Option Selection</b>     | Create <b>Sequences</b> , select <b>Protocols</b> or adjust the <b>Incrementor</b> .   |

## Creating a Slide Sequence

### To create a sequence of Slides:

1. Scan or manually enter a code.
2. Press the Sequence button.
3. Set the **sequence range** using the two input boxes:

**Tip:** If the numbers and letters in the two input boxes are not consistent, a warning will be displayed that this sequence will produce 0 Slides.

4. The number where your sequence begins in the **First Item** box is automatically populated.
5. Enter the number where your sequence ends in the **Last Item** box. The up and down arrows can be used to increase or decrease this item.
6. Press **APPLY** to confirm.

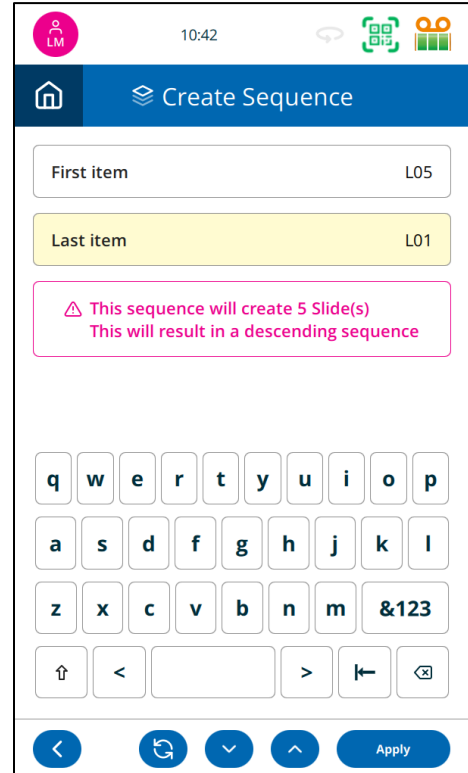
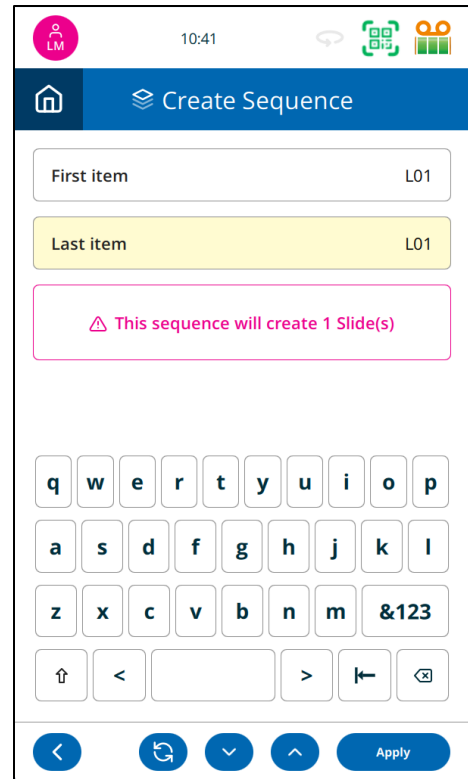
Once you press Apply, the display will return to the main menu, where the print queue for the selected sequence will be displayed. A maximum of 200 Slides can be added to the queue using the sequence function.

To create a sequence that reverses the print order, create a range, then press the Swap button to swap the first and last values, this will create a sequence in reverse order.

**Note:** For very large sequences, it may take time to build the on-screen queue.

**Tip:** Use the keyboard up/down arrows to speed up number entry.

**Important:** The current template **must include an Auto (incrementing) Item** for the Sequence button to appear.



# Protocols

## Creating a Protocol

A **protocol** is a reusable sequence of Slides that reduces repetitive data entry.

To create a protocol:

1. **Scan or manually enter data** to create the first Slide.
2. Create a sequence as needed.
3. Edit individual fields (e.g., hopper, Tissue Type, or any other editable Slide data).

 **Tip:** Items must be set to **User Type** in the template.

4. Press the **Protocol** button.
5. When prompted, enter a name for the new protocol. Press **APPLY** to save the protocol.

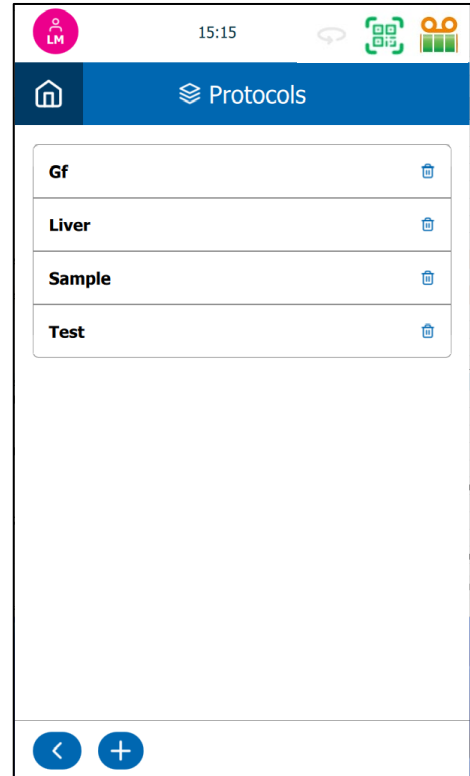
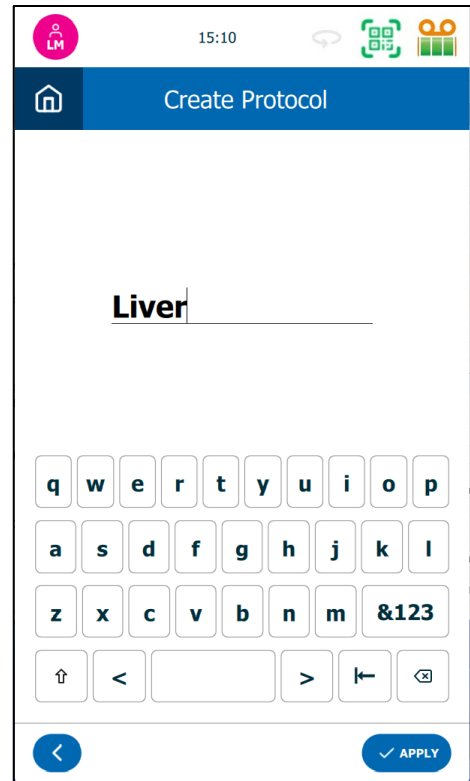
The protocol is now saved and can be reused at any time.

## Recalling a Protocol

To use a saved protocol:

1. **Scan or enter data** to initiate a new Slide.
2. Press the **Protocol** button.
3. Press the **back** button.
4. Select the desired **protocol** from the list.
5. Press **APPLY**.

The queue will be created automatically and prepared for printing.



## Printer Settings Menu


The **Printer Settings Menu** is the central hub for configuring the PiSmart printer.

### Accessing the Settings Menu


- Press the Settings button located at the **bottom-left corner** of the Home Screen.

### Menu Navigation

- From the **Settings Menu**, you can access all other printer configuration options (e.g., Users, Printer, Label Designer, etc.).
- Menu items unavailable to a user's access level will appear **grayed out**.

 **Note:** Only Admin Users have access to all configuration options.

### Navigation Controls

 Press the **HOME** button at any time to exit and return to the **Home Screen**.

 Press the **SETTINGS** button within any submenu to return to the main Settings Menu.

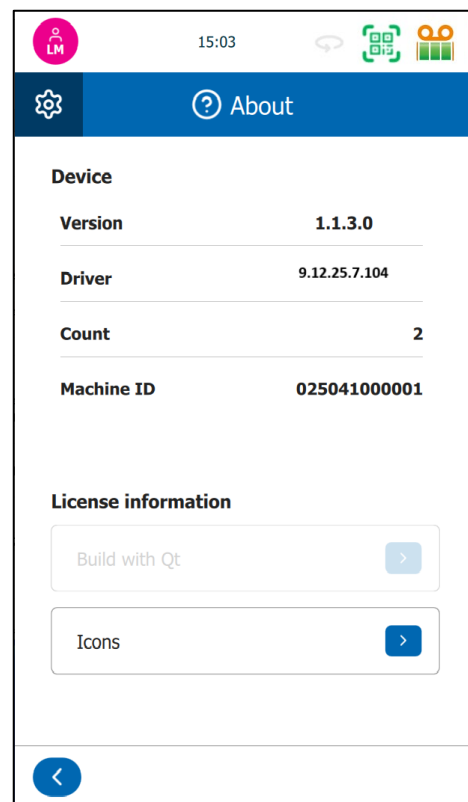
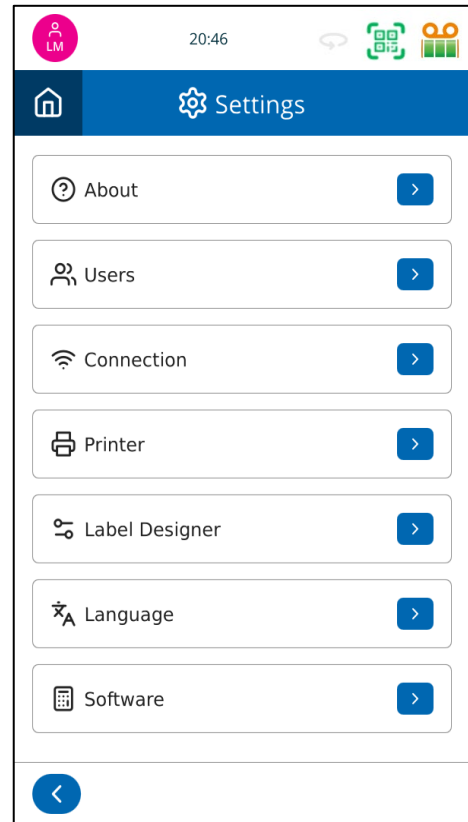
## About Menu

The **About Menu** provides read-only information about the printer system. No settings can be changed from this menu.

### Information Displayed:

- **Software Version** – Current firmware version installed on the printer.
- **Driver Version** – Version of the print driver in use.
- **Print Count** – Total number of Slides printed by the device.
- **Machine ID / MAC Address** – The unique network identifier assigned to the printer.
- **CPU Name** – This will be displayed when any special key is inserted.

This information may be required for technical support or troubleshooting.



## Connection

### Connection Settings

Connection Settings are used to connect the PiSmart printer to a local network, enabling features such as LIS communication, remote configuration, and time synchronization.

#### Physical Connection

The printer connects to a network via a standard RJ45 Ethernet port located on the rear panel. (Cable not included)

#### Connect using Automatic (DHCP) IP settings.


##### To establish a network connection:

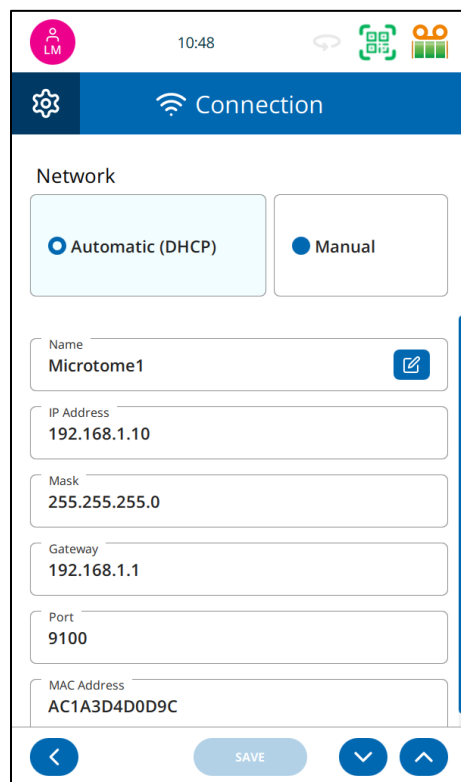
1. Ensure the printer is **powered off**.
2. Insert a standard Ethernet (network) cable into the **RJ45 port** on the back of the printer.
3. Connect the other end of the cable to a live **network port** (e.g., a wall jack, switch, or router).
4. Power on the printer. When the printer is fully powered, the network activity LEDs next to the network port should begin to flicker showing networking activity. If these LEDs are not flickering, this indicates the printer is not connected to an active network port.

#### Viewing Network Status

Once the printer has powered on and completed its startup process:

1. Press the **Settings** button from the Home Screen.
2. Select **Connection** from the Settings Menu.
3. The screen will display the current network configuration, including:
  - **Printer Name**
  - **IP Address**
  - **Subnet Mask**
  - **Gateway**
  - **Port**
  - **MAC Address**

 **Tip:** If an IP address is not displayed, verify cable connections and ensure the network is active.



### When Manual (Fixed IP) Is selected.

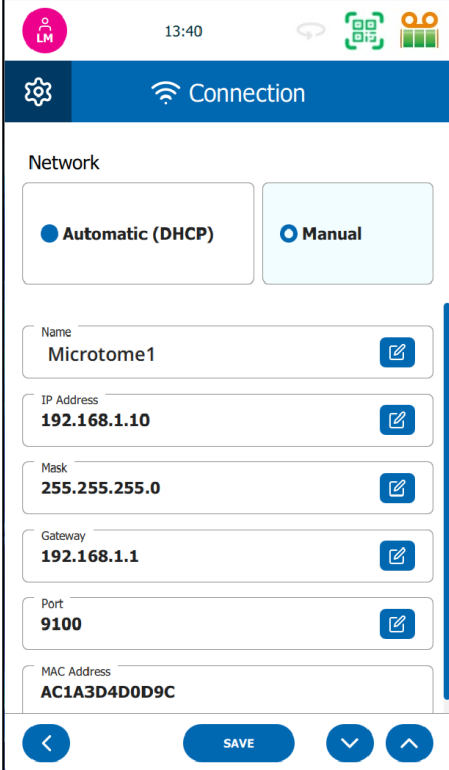
1. Press **Settings > Connection**.
2. Select **Manual** to configure **Static IP**.

**Note:** Selections below can only be edited when in **Manual** mode.

Enter the following network settings:

- IP Address (only when using Static IP)
  - Mask
  - Gateway
  - Port
3. Press **SAVE** to apply changes.

**Tip:** Use static IP for consistent access.



The screenshot shows the 'Connection' settings screen. At the top, there is a status bar with the time 13:40 and various icons. Below the status bar is a blue header with a gear icon and the text 'Connection'. The main content area is titled 'Network' and contains two radio buttons: 'Automatic (DHCP)' and 'Manual'. The 'Manual' option is selected. Below the radio buttons are several input fields, each with a blue edit icon to its right. The fields are: 'Name' with the value 'Microtome1', 'IP Address' with the value '192.168.1.10', 'Mask' with the value '255.255.255.0', 'Gateway' with the value '192.168.1.1', 'Port' with the value '9100', and 'MAC Address' with the value 'AC1A3D4D0D9C'. At the bottom of the screen, there is a navigation bar with a back arrow, a 'SAVE' button, a down arrow, and an up arrow.

## Printer Menu

The **Printer Menu** is used to operate and configure the printer's hardware and provides access to advanced **Service** and **Production** menus.

### Access Control

- **Service** and **Production** menus are **restricted** and require a **special access key**.
- A **padlock icon** next to these items indicates that they are currently **locked**.

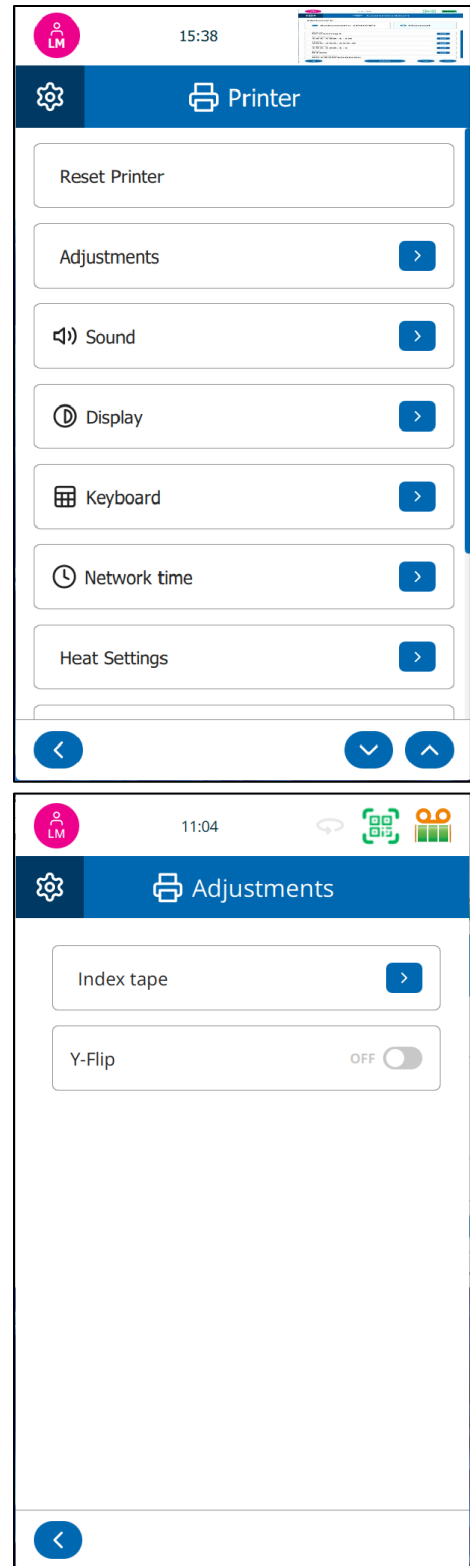
### Reset Printer

Press to **reset all motors**. This is useful for clearing jams or reinitializing hardware components.

### Adjustments

To Index the Printing Ribbon, press **Index Tape**.

To rotate the print image, toggle the **Y-Flip** selector to **ON**.



## Sound

Press to **toggle printer** sound on or off (e.g., beep confirmations, error messages).

Use the + and – buttons to **adjust the volume level** to your preference.

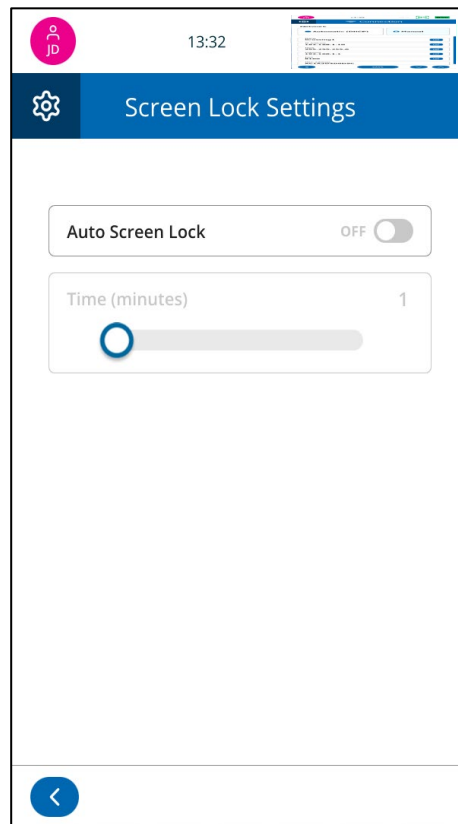
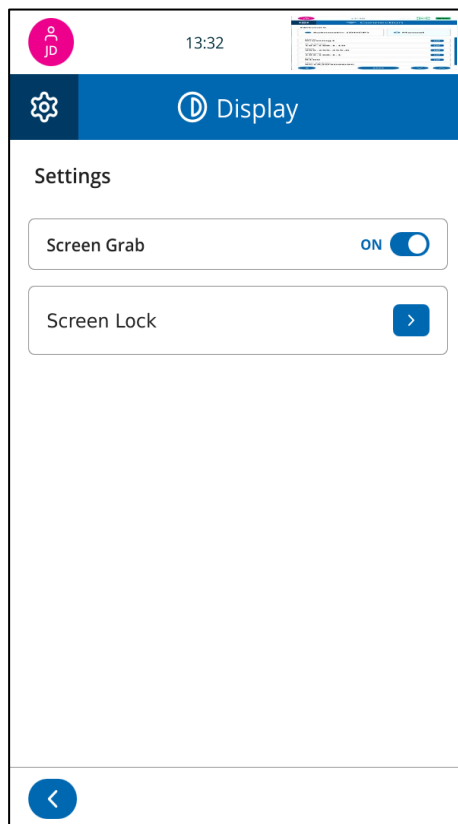
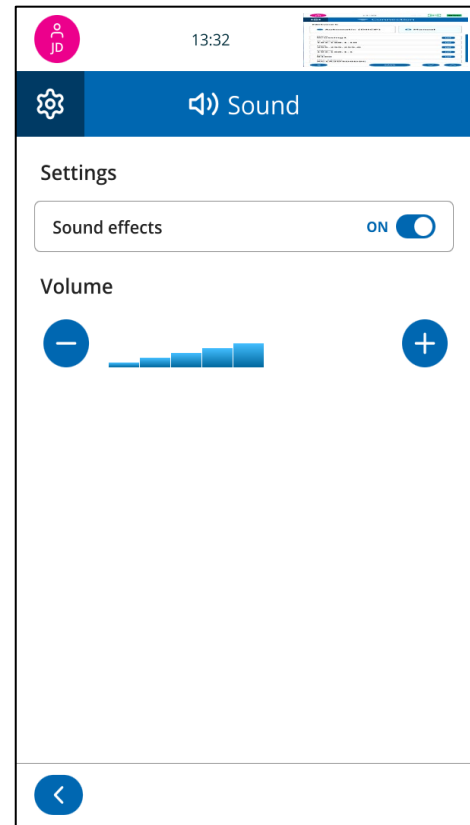
## Display

**Screen Grab:** Toggle this feature to enable or disable automatic **screen capture**. When enabled, pressing the capture shortcut saves an image of the screen to a connected **USB thumb drive**.

**⚠ Note:** Capture shortcut is an invisible button in the displayed time.

**Screen Lock:** Automatically locks the screen after a period of inactivity.

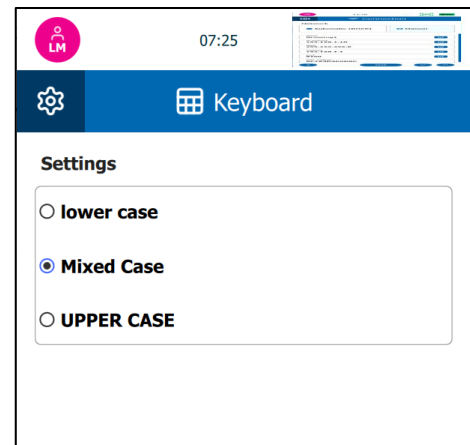
- Adjustable timeout: **1 to 60 minutes**.
- Useful for security and preventing unauthorized access.



## Keyboard

Allows the user to choose between **lower case**, **Mixed Case** and **UPPER-CASE** input modes for on-screen typing.

This setting affects all text entry fields, including sample IDs, username, and label content.



## External Keyboards

The PiSmart printer supports most external keyboards. An external keyboard can be used for text entry in fields such as sample IDs, user credentials, and label data.

**Tip:** While the system is compatible with many standard USB and Wireless keyboards, functionality may vary depending on the keyboard's make and model. Some multimedia or wireless keyboards may not be fully supported.

### Recommendations:

- Use a basic keyboard for optimal compatibility.
- Avoid models requiring special drivers or proprietary software.
- Test the keyboard before relying on it for routine operations.

## Network Time

The **Network Time** menu allows users to set the printer's **time and date** either **manually** or **automatically** via **network** synchronization.

### Setting Time and Date:

To set the **time** manually:

1. Turn **Network Time OFF** to enable manual entry.
2. Enter the desired time using the numeric keypad.
3. Press **SAVE** to apply changes.

The screenshot shows the 'Network time' settings page. At the top, the current time is 07:06. Below the title bar, there is a 'Current time' field displaying '07:06'. Underneath, a 'Set new time' section features a numeric keypad with the digits '1 5 0 0' entered. Below the keypad is a clear button with an 'X' icon. At the bottom of the screen, there are navigation arrows and a 'SAVE' button.

To set the **date** manually:

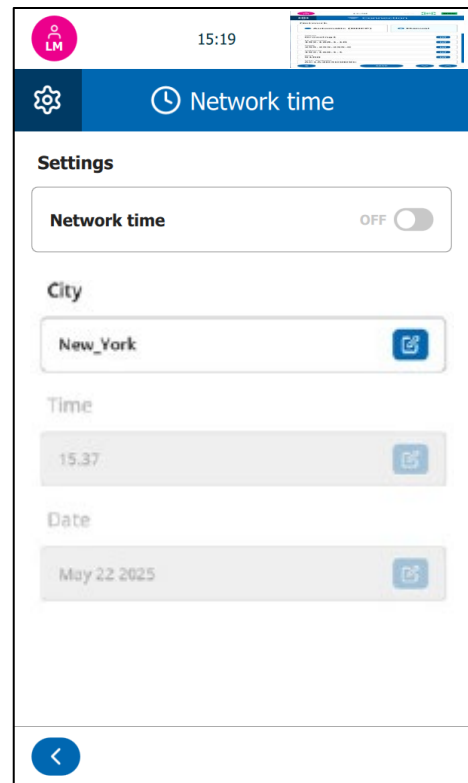
1. Press the **DATE** field to open the calendar.
2. Use the **left and right arrows** to navigate between months.
3. Select the correct date.
4. Press **SAVE** when finished.

The screenshot shows the 'Network time' settings page with the date selection interface. At the top, the current date is 'June 20 2025'. Below the title bar, there is a 'Current date' field displaying 'June 20 2025'. Underneath, a 'Set new date' section features a calendar for 'June 2025'. The calendar shows days from 1 to 31, with the 19th highlighted in pink. Navigation arrows are present at the top of the calendar. At the bottom of the screen, there are navigation arrows and a 'SAVE' button.

## Using Network Time

When the printer is connected to a network, **Network Time** can be turned **ON** to automatically synchronize the time and date. This ensures accuracy and consistency across connected systems.

Before switching network time on, the actual time should be set. This step sets the current time zone.



## Heat Settings

The **Heat Settings** control the print darkness by adjusting the heat level applied during printing.

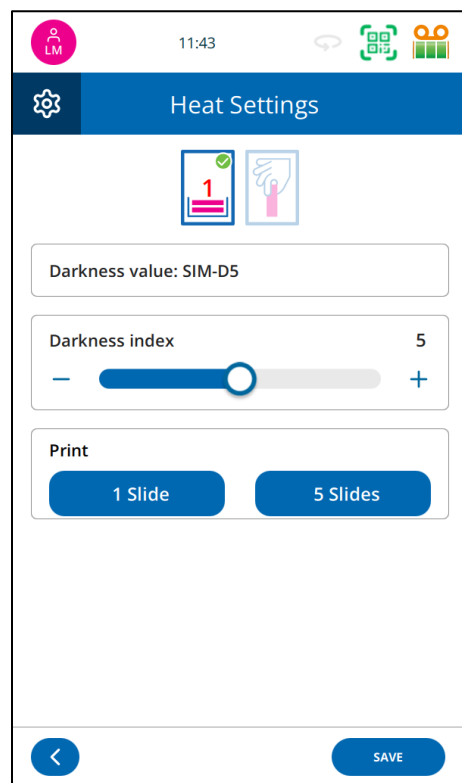
Use the + and – buttons to adjust the heat level.

Press the print buttons to sample the actual darkness

- **Level 9** = Darkest print.
- **Level 1** = Lightest print.

**Warning:** Setting the heat level **incorrectly** for a specific Slide type may result in:

- **Poor print quality** (e.g., blurring).
- Reduced **Barcode** successful read rate.
- It is recommended to start with a **moderate setting** and adjust as needed based on your slide type and label design. For additional help, refer to troubleshooting section of this guide for help with print quality issues.



## Heat Setting Guidelines

| Heat Level | Slide Type                                    | Notes   | Recommended |
|------------|---|---|-------------|
| 7 - 8      | StatLab KT Series Slides (KT1, KT3+ and KT5+) | <ul style="list-style-type: none"> <li>• Designed for optimal print in the PiSmart S1</li> <li>• Very resilient to heat levels</li> </ul> | Preferred   |
| 4 – 6      | MCOMM Series slides                           | <ul style="list-style-type: none"> <li>• Provides very good print</li> <li>• Avoid setting higher than 6</li> </ul>                       | Preferred   |
| 5 - 7      | COLORVIEW Series                              | <ul style="list-style-type: none"> <li>• Provides good print</li> <li>• Very resilient to heat levels</li> </ul>                          | Approved    |

## Internal Label Designer

The **Internal Label Designer** is a critical component of the PiSmart printer interface. It is responsible for converting delimited text strings or other structured input formats into printable label designs. This feature ensures that incoming data, whether manually entered, scanned, or received from a Laboratory Information System (LIS) is accurately mapped to visual elements on a Slide.

To convert text-based data into a printable label, the system follows four essential configuration steps:

### 1. Setting Up Items Format

Items are individual data fields (e.g., Sample ID, Patient Name, Accession Number) that hold textual or numeric values displayed on a label. Each Item must be properly configured with the appropriate data type, name, default values, character limits, and format (text, list, numeric, etc.).

### 2. Setting Up Objects Format

Objects represent components such as requisition, container, Slide, or slide. Once Translators are configured, they are linked to Objects, which identify the type of component that was scanned or printed.

### 3. Setting Up a Translator

Translators act as the bridge between raw input data and formatted label content. They:

- Parse incoming text using defined delimiters (e.g., |, ).
- Assign parsed data to Items.
- Apply optional rules to transform or validate the data.

This step ensures that scanned barcodes or LIS data are interpreted and displayed correctly on the Slide label.

### 4. Setting Up a Template

Templates define the layout of the printed label. They combine Objects, assigned Items, Translators, and design specifications such as alignment, font size, and positioning. A well-structured template ensures that each Slide is printed consistently and clearly, in accordance with laboratory requirements.

**⚠ Note:** Each of these steps must be carefully completed to ensure accurate data-to-label translation. A misconfiguration in any part of the process can lead to incorrect or missing information on printed Slides.

## Items

**Items** are data fields used to hold or receive information that appear on printed Slides. These fields can be populated in one of three ways:

1. Manual entry - entered directly using the keyboard.
2. LIS Integration - Automatically populated from a connected LIS system.
3. Barcode Scanning - Retrieved by scanning a barcode.

### Item Types and Functions

Items can be configured to:

- Accept **alpha-numeric** input.
- Use a **drop-down list** of predefined values.
- Function as a **custom sequence**, such as Roman numerals.

## Customization

Within the **Items Menu**, a list of available Items is displayed. Each Item can be customized to match local terminology or workflow requirements; for example, renaming an item to "Case Number" or "Accession Number."

To edit an Item:

1. Press the **Edit button** next to the Item name.
2. The **Item Editor** will open, displaying the selected Item name in the top banner.
  - **Modify the Item Name.**
  - **Set Default Text.** (used if no data is provided)
  - **Choose a Data Type:**
    - Text.
    - Numeric.
    - List.
  - **Set Character Count.** (maximum number of characters allowed)
  - **Truncate on Print** This is a non-destructive shortening of the text field for printing.

The screenshot shows the 'Item Editor' interface for an item named 'Suffix2'. The interface is displayed on a mobile device, with a status bar at the top showing the time as 14:03 and various icons. The header of the editor is blue and contains a gear icon and the text 'Suffix2'. Below the header, the word 'Edit' is displayed. The editor consists of several fields, each with a blue edit icon to its right: 'Name' (containing 'Suffix2'), 'Default text' (containing '01'), and 'Data type' (containing 'Text'). Below these fields is a 'Character count' section with a slider set to '2' and minus/plus buttons. At the bottom of this section is a checkbox labeled 'Truncate on print'. The bottom of the screen features a blue back arrow and a grey 'APPLY' button with a checkmark.

Once all changes are complete, press **APPLY** to save.

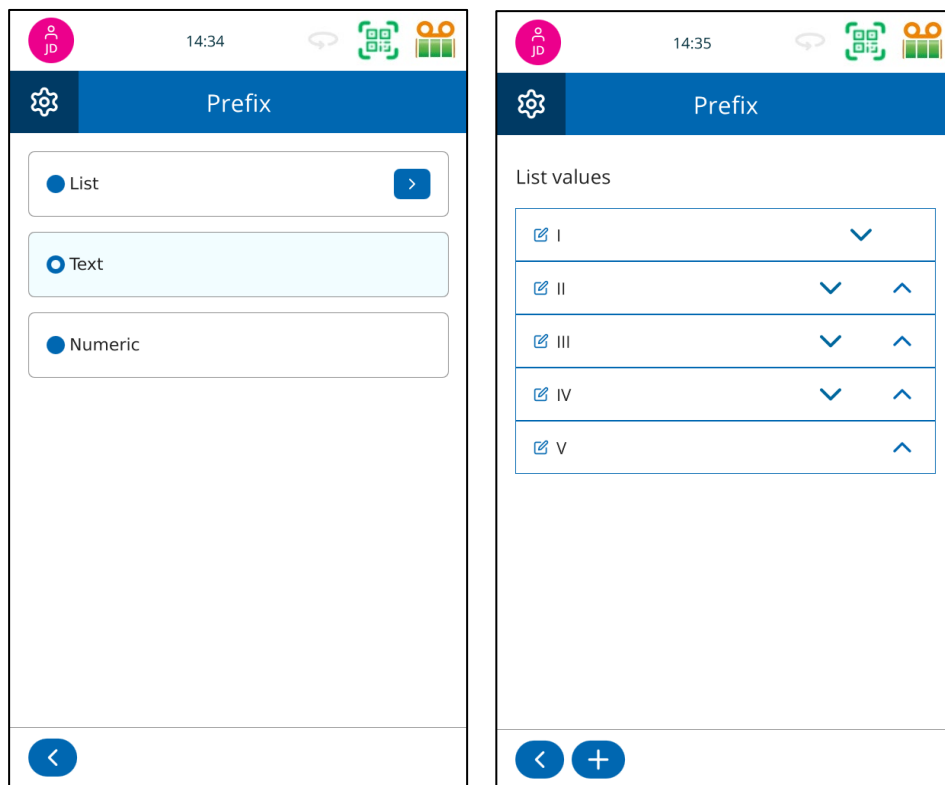
## Using a List

To configure an Item to use a predefined List, allowing for dropdown selection or sequence-based input.

Example: Creating a List of Roman Numerals for the "Prefix" Item.

1. Open the **Prefix** Item.
2. Change the **Data Type** to **List**.
3. The **List Values Menu** will open.
4. Press the **+ button** to add a new List Value.
5. Enter **I** using the on-screen keyboard.
6. Press **APPLY** – "I" will now appear in the Value List.
7. Continue adding values (e.g., II, III, IV...) as needed.
8. Once complete, press the **Back** button to exit the list editor.

The defined Roman numerals can now be selected from a dropdown or used as an incrementing (if set as an Auto) value when creating a Sequence.



## Objects

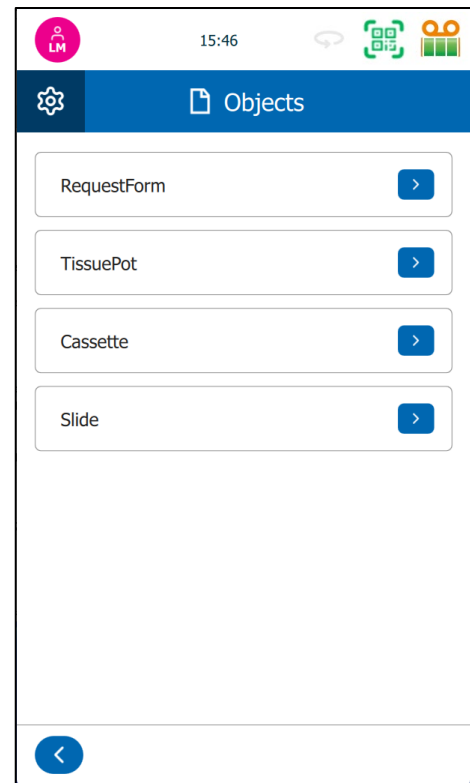
Objects represent the components (e.g., requisition, container, Slide or slide). Once Translators are configured, they are linked to Objects, which identifies the type of component that was scanned or printed.

- Identify the element/object (e.g., Request form, Tissue Pot, Slide or Slide).
- Press **Label Designer > Objects**.
- The Object is linked for use in PathSmart software.

**⚠ Note:** PathSmart is a printer configuration tool and sample tracking system sold by StatLab.

The printer is supplied with four standard Objects that are configured in the following way:

- Request form (Prefix and Case Number).
- Tissue Pot (Suffix 1).
- Slide (Suffix 2).
- Slide (Level).



## Translators

Translators are used to control how incoming and outgoing data is filtered, interpreted, and formatted within the system.

- **Incoming Data Translation:** When data, such as a barcode scan, is received, it is passed through an **incoming translator**. This translator extracts specific segments from the raw input and assigns them to defined data items. This enables the system to use the relevant information when printing.
- **Outgoing Data Translation:** This is used when assembling single or multiple Items into a string of data. This is especially useful when creating barcodes.

### Example: Incoming Data from a Scanned Barcode

Suppose a barcode is scanned with the following raw data:

```
123456|DOE|JANE|05/22/2025
```

An **incoming translator** might be configured to extract and assign the data as follows:

| Position | Field         | Value      |
|----------|---------------|------------|
| 1        | Patient ID    | 123456     |
| 2        | Last Name     | DOE        |
| 3        | First Name    | JANE       |
| 4        | Date of Birth | 05/22/2025 |

The translator uses the “|” delimiter to separate values and map them into the respective data fields.

## Adding a New Translator for text with delimiters

Translators allow you to control how data is formatted and assigned to label elements.

### Create a new Translator

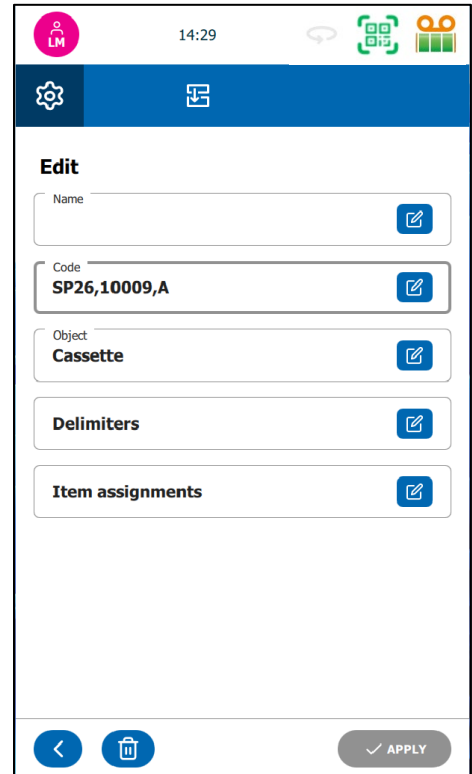
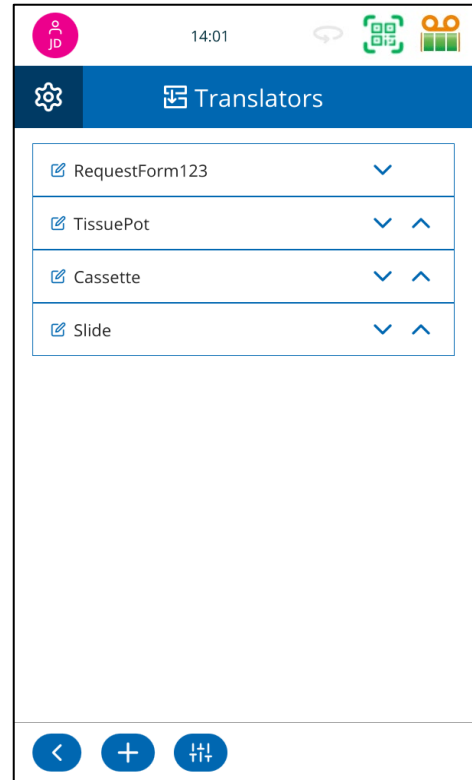
- Press **Label Designer** in the Settings Menu.
- Press the **Translators** button.
- Press the **Add (+)** button.

A new Translator entry will appear, prompting configuration.

### Enter Sample Data


Provide sample data that represents what will be used on the label.

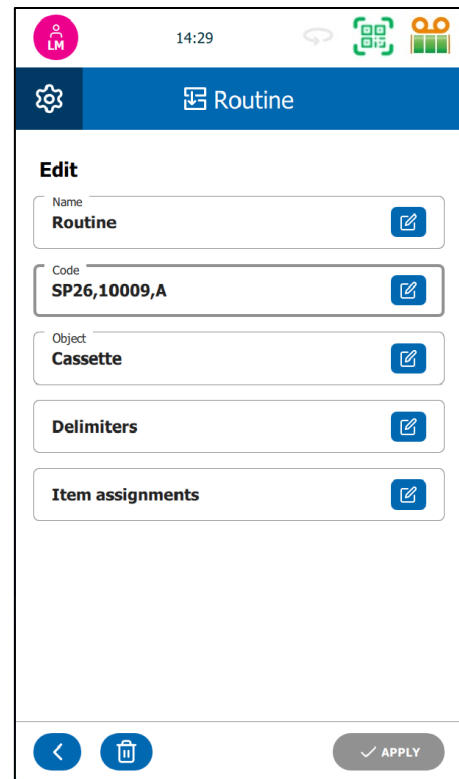
- **Barcode users:** Scan a barcode using the integrated scanner to populate the field automatically.
  - **Manual entry:** Type the sample data manually, ensuring it follows the correct format.
- Tip:** Ensure your sample data matches your label requirements (e.g., number of digits, formatting, delimiters).



## Name the Template

Enter a clear and descriptive **Template Name** (e.g., “Routine Slide Label”, “Tissue Pot Label”).

 **Tip:** Use meaningful names to avoid confusion if multiple templates exist.




The screenshot shows the 'Edit Routine' screen. At the top, there is a status bar with a user profile icon (LM), the time 14:29, and system icons. Below the status bar is a blue header with a gear icon and the text 'Routine'. The main content area is titled 'Edit' and contains five input fields, each with a blue edit icon on the right: 'Name' (Routine), 'Code' (SP26,10009,A), 'Object' (Cassette), 'Delimiters', and 'Item assignments'. At the bottom, there is a navigation bar with a back arrow, a trash can icon, and an 'APPLY' button with a checkmark.

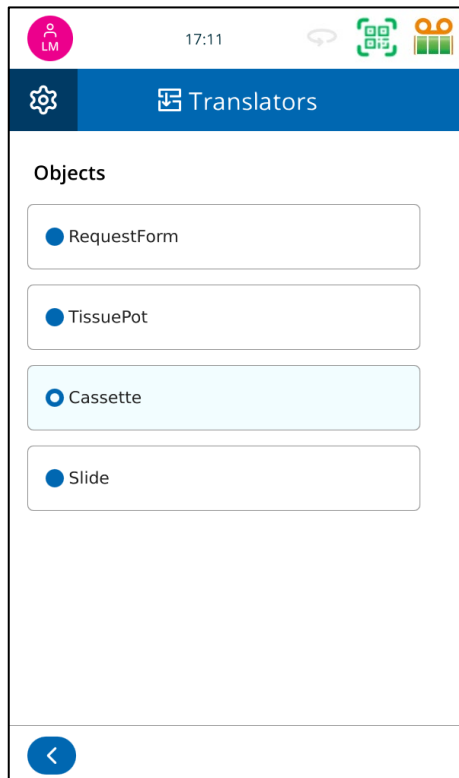
## Select the Object Type

Choose the object this label applies to:

Options include:

- Request Form
- Tissue Pot
- Slide
- Slide

 **Tip:** Selecting the correct object ensures data is displayed properly.



The screenshot shows the 'Translators' screen. At the top, there is a status bar with a user profile icon (LM), the time 17:11, and system icons. Below the status bar is a blue header with a gear icon and the text 'Translators'. The main content area is titled 'Objects' and contains four radio button options: 'RequestForm', 'TissuePot', 'Cassette' (which is selected and highlighted in light blue), and 'Slide'. At the bottom, there is a navigation bar with a back arrow icon.

## Set Appropriate Delimiters


Define how the incoming data will be split:

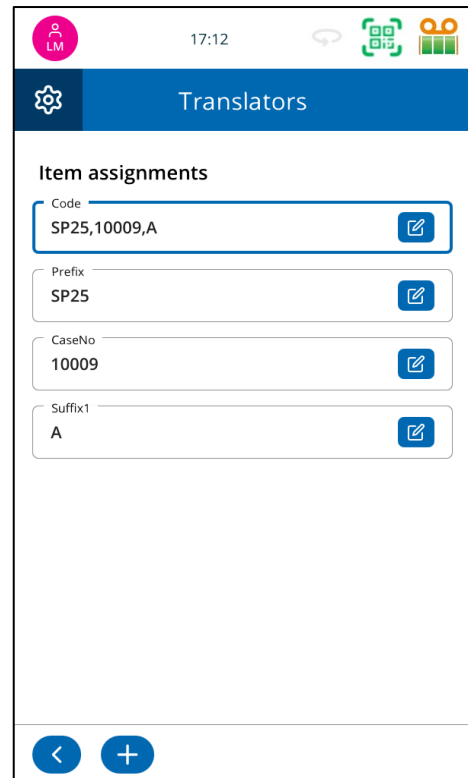
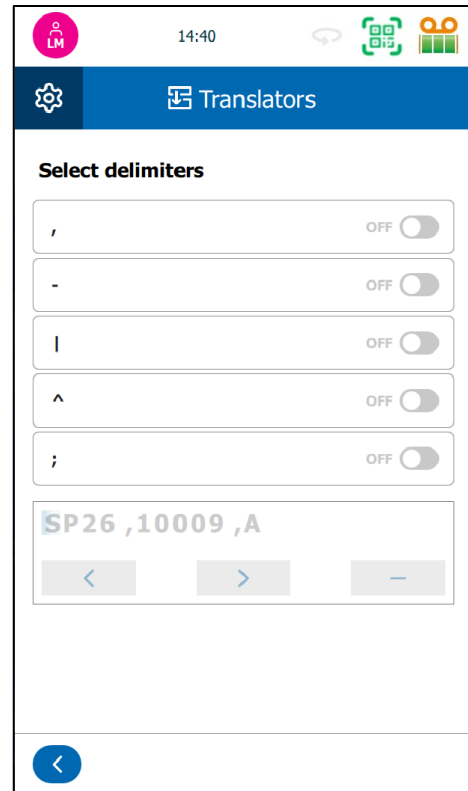
- **Examples:** |, comma, tab \t, or custom symbols.

If working with barcodes, you may need to set

### delimiting characters.

- **Example:** For 123456|DOE|JANE, use “|” as the delimiter.

 **Tip:** Your delimiters must match the actual structure of the incoming data.




## Assigning Data Items

Press the **ITEM ASSIGNMENTS** button.

Make sure data bit is set for the correct Item.

- Example: SP25 to Prefix Item.

To assign a different Item, press the **Edit** button and select a different **Item**.

 **Tip:** Double-check assignments to prevent mismatches on printed labels.

## Add Additional Label Items (if needed)

If more objects are needed (e.g., extra barcode, text, logo):

- Press the **Add (+)** button within the translator.
- Assign an Item from the list.

**Tip:** Yellow background indicates **Rules** are associated with this item.

**Tip:** Maintain consistent alignment and spacing for a professional layout.

## Apply Your Changes

When configuration is complete, press the **APPLY** button to save the Translator and template.

**Tip:** Review all assignments, settings, and layout before applying changes.

LM 17:24

### Translators

Item assignments

|          |              |        |
|----------|--------------|--------|
| Code     | SP25,10009,A | [edit] |
| Prefix   | SP25         | [edit] |
| CaseNo   | 10009        | [edit] |
| Suffix1  | A            | [edit] |
| Generic5 | [icon]       | [edit] |

[back] [add]

LM 17:12

### Routine

Edit

|                  |              |        |
|------------------|--------------|--------|
| Name             | Routine      | [edit] |
| Code             | SP25,10009,A | [edit] |
| Object           | TissuePot    | [edit] |
| Delimiters       |              | [edit] |
| Item assignments |              | [edit] |

[back] [trash] [apply]

LM 17:13

### Translators

|                           |     |
|---------------------------|-----|
| [checkbox] RequestForm123 | ▼   |
| [checkbox] TissuePot      | ▼ ▲ |
| [checkbox] Cassette       | ▼ ▲ |
| [checkbox] Slide          | ▼ ▲ |
| [checkbox] Routine        | ▼ ▲ |


[back] [add] [refresh]

## Creating a translator for Zebra (ZPL) file format


The PiSmart printers are designed to automatically recognize Zebra formatted files and convert the multiple line text string to item assignments without selection of a delimiter. To set up a translator for Zebra files, follow the steps below.

When setting up a Zebra format Translator, the data string will need to be entered in a different way.

- From the Label Designer menu, Press the **Translators button**.
- Press the **Add (+)** button.
- A new Translator entry will appear, prompting configuration.

 **Tip:** Do **NOT** enter sample data as part of this configuration.

- **Name the Template**  
Enter a clear and descriptive **Template Name** (e.g., “Zebra”).

 **Tip:** Use meaningful names to avoid confusion if multiple templates exist.

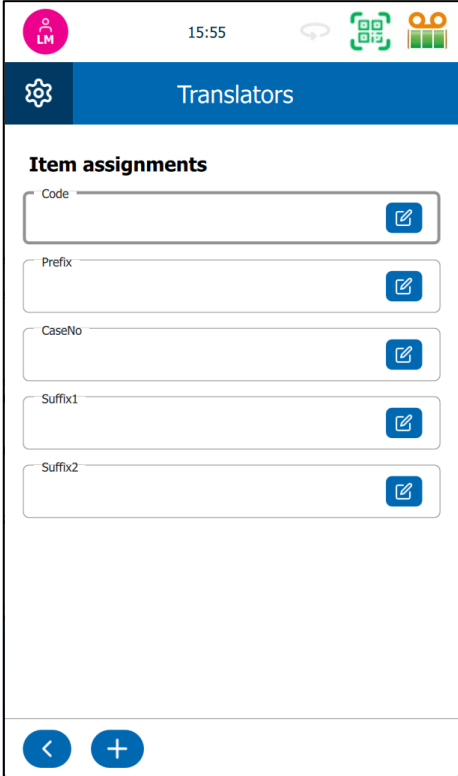
- **Select the Object Type**  
Choose the object this label applies to:

 **Tip:** No delimiters will need to be selected.

- **Assign the Data Item**  
Add one item for each data item sent within the Zebra file.
- Press the **Add (+)** button within the translator.
- Assign an Item from the list.
- Repeat these steps until all necessary Items have been added.

When configuration is complete, press the **APPLY** button to save the Translator and template.

 **Tip:** Review all assignments, settings, and layout before applying changes.



The screenshot displays the 'Translators' configuration screen. At the top, there is a status bar with a pink circular icon containing 'LM', the time '15:55', and several utility icons. Below this is a blue header bar with a gear icon and the text 'Translators'. The main content area is titled 'Item assignments' and contains five input fields: 'Code', 'Prefix', 'CaseNo', 'Suffix1', and 'Suffix2'. Each field has a blue edit icon to its right. At the bottom of the screen, there is a navigation bar with a blue back arrow and a blue plus sign (+) button.

## Adding a New Translator for Text with No Delimiters

Data will sometimes not include delimiting characters. In these examples the data must contain the same number of text items for the translator to work correctly. Follow these steps to create a new Translator that will include **NO** delimiters:

### Example: Incoming Data from a Scanned Barcode

Suppose a barcode is scanned with the following raw data:


S2512567A01

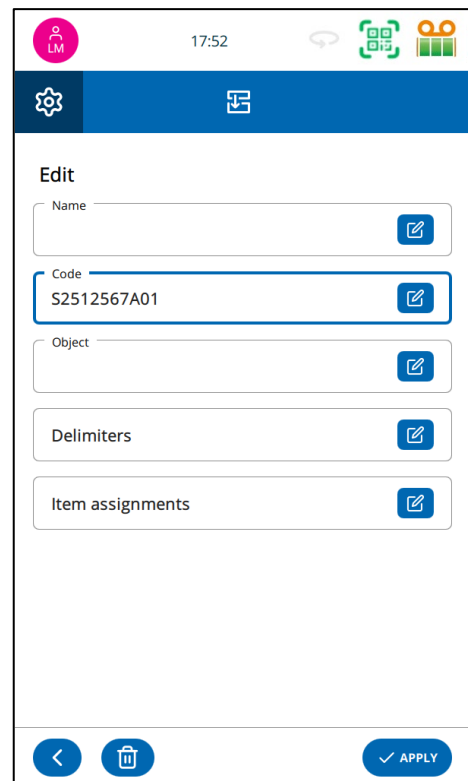
An **incoming translator** might be configured to extract and assign the data as follows:

| Position | Field       | Value |
|----------|-------------|-------|
| 1        | Prefix      | S25   |
| 2        | Case Number | 12567 |
| 3        | Suffix 1    | A     |
| 4        | Suffix 2    | 01    |

The translator uses the number of characters to separate values and map them into the respective data fields.

- In the Label Designer menu, Press the **Translators** button.
- Press the **Add (+)** button.  
A new Translator entry will appear, prompting configuration.
- **Enter Sample Data**
  - Provide sample data that represents what will be used on the label.
  - **Barcode users:** Scan a barcode using the scanner to populate the field automatically.
  - **Manual entry:** Type the sample data manually, ensuring it follows the correct format.

 **Tip:** Ensure your sample data matches your label requirements (e.g., number of digits).



The screenshot shows the 'Edit' configuration screen for a translator in the Label Designer. The interface includes a top navigation bar with a settings icon and a 'Translators' button. The main content area has the following fields:

- Name:** An empty text field with an edit icon.
- Code:** A text field containing 'S2512567A01' with an edit icon.
- Object:** An empty text field with an edit icon.
- Delimiters:** An empty text field with an edit icon.
- Item assignments:** An empty text field with an edit icon.

The bottom navigation bar contains three buttons: a back arrow, a trash can (delete), and an 'APPLY' button with a checkmark.

- **Name the Template**
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Enter a clear and descriptive **Template Name** (e.g., “Routine Slide Label”, “Tissue Pot Label”).

**Tip:** Use meaningful names to avoid confusion if multiple templates exist.

The screenshot shows a mobile application interface for editing a template. At the top, there is a status bar with a profile icon, the time 17:56, and system icons. Below is a blue header with a gear icon. The main content area is titled 'Edit' and contains a 'Name' input field. The text 'Any Lab Template' is entered into this field. Below the input field is a QWERTY keyboard with a spacebar and a '&123' key. At the bottom, there is a navigation bar with a back arrow, a trash can icon, and an 'APPLY' button.

- **Select the Object Type**

**Tip:** Selecting the correct object ensures data is displayed properly.

The screenshot shows the same mobile application interface, but now the 'Edit' screen has several fields with edit icons (pencil icons) to the right of each field. The fields are: 'Name' (containing 'Any Lab Template'), 'Code' (containing 'S2512567A01'), 'Object' (containing 'Cassette'), 'Delimiters', and 'Item assignments'. The 'Object' field is highlighted with a blue border. At the bottom, the navigation bar includes a back arrow, a trash can icon, and an 'APPLY' button.

- **Select Delimiters**

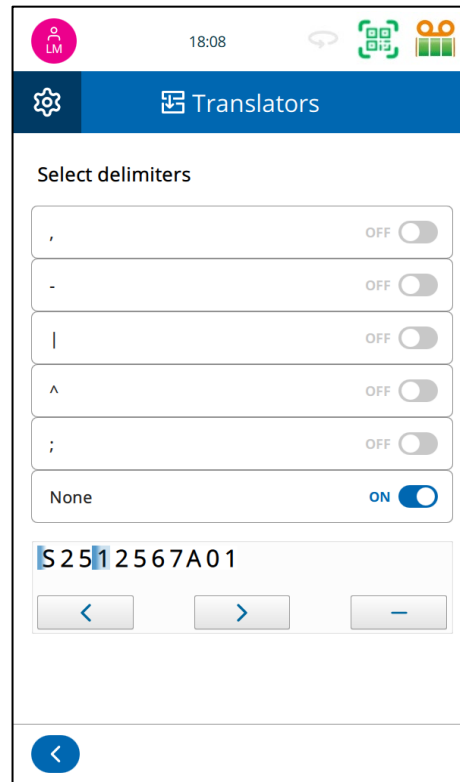
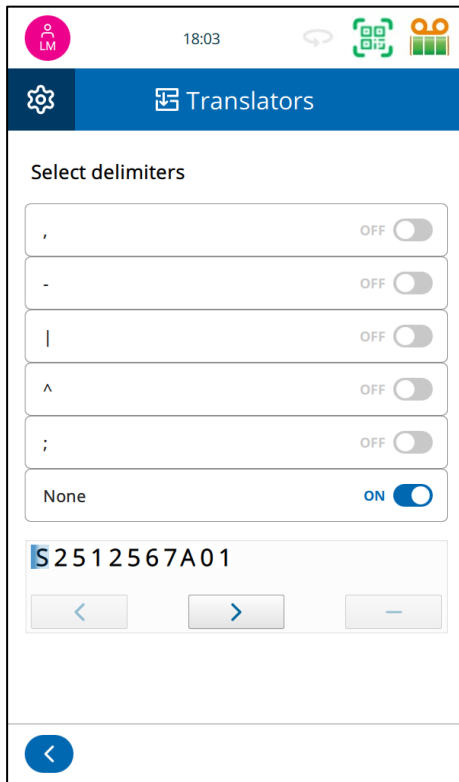
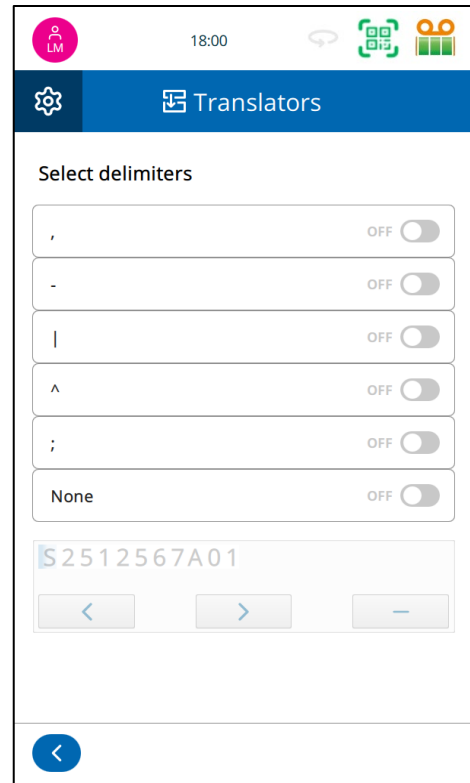
If no delimiters exist, select **None**.

**Example:** For S2512567A01 use **None** as the delimiter.

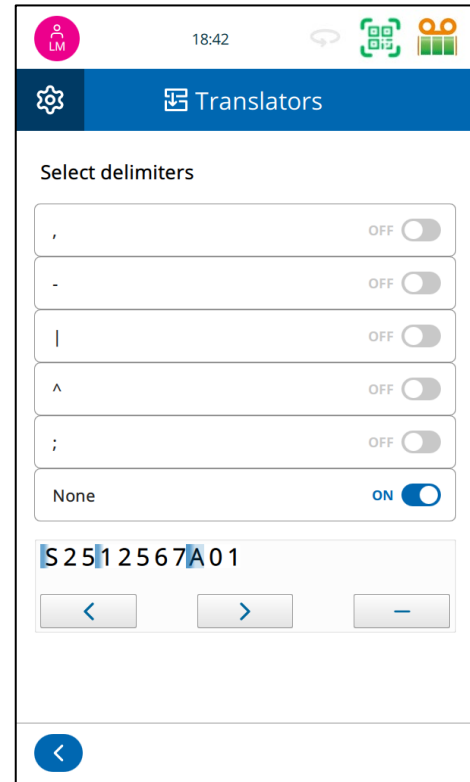
**Tip:** The length of the incoming data must always be the same for this method to work correctly.

When **None** is selected, the bottom section will become active and allow the data to be **delimited manually**. A separator will appear at the beginning of the data.

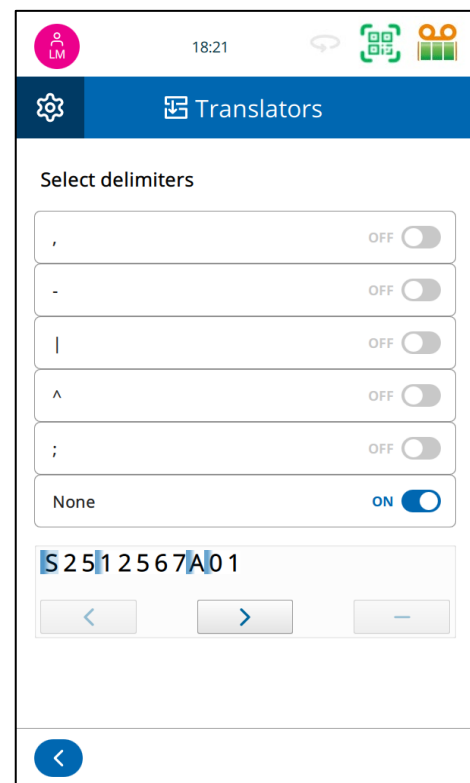
- Press the right arrow to move the cursor to the right of the **first** value. In this case it will be between the 5 and the 1 and press the + button. A separator will appear between the 5 and the 1.



- Press the right arrow to move the cursor to the right of the **second** value. In this case it will be between the 7 and the A and press the + button. A separator will appear between the 7 and the A.




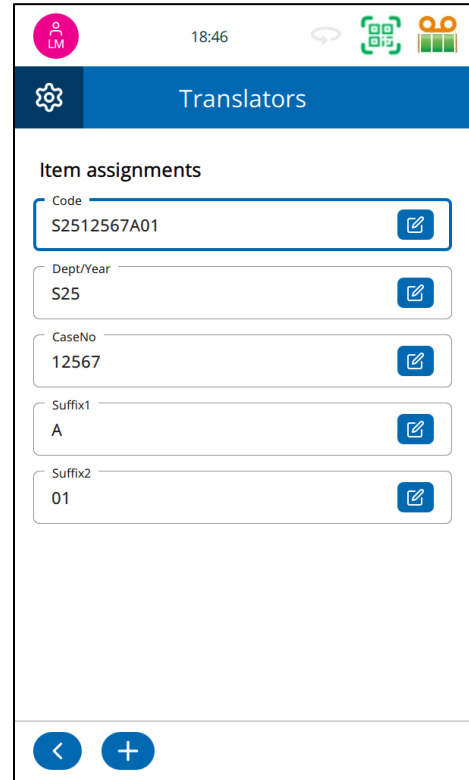
- Press the right arrow to move the cursor to the right of the **third** value. In this case it will be between the A and the 0 and press the + button. A separator will appear between the A and the 0.
- Press the **back** button when complete.



## Assigning Data Items

- Press the **ITEM ASSIGNMENTS** button.
- Make sure data bit is set for the correct Item  
**Example:** S25 to Prefix Item.
- To assign a different Item, press the **Edit** button and select a different **Item**.

 **Tip:** Double-check assignments to prevent mismatches on printed labels.




The screenshot shows the 'Translators' app interface. At the top, there is a status bar with a pink profile icon (LM), the time 18:46, and navigation icons. Below the status bar is a blue header with a gear icon and the text 'Translators'. The main content area is titled 'Item assignments' and contains five input fields, each with an edit icon (pencil) to its right:

- Code: S2512567A01
- Dept/Year: S25
- CaseNo: 12567
- Suffix1: A
- Suffix2: 01


At the bottom of the screen, there are two blue circular buttons: a back arrow and a plus sign.

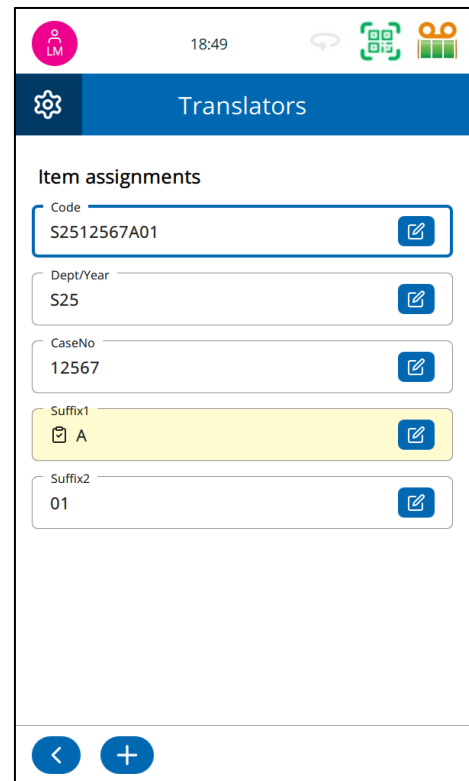
## Add Additional Label Items (if needed)

- Press the **Add (+)** button within the translator.
- Assign Items from the list.
- **Yellow** background indicates **Rules** are associated with this item.

 **Tip:** Maintain consistent alignment and spacing for a professional layout.

- When configuration is complete, press the **APPLY** button to save the Translator and template.

 **Tip:** Review all assignments, settings, and layout before applying changes.



This screenshot is identical to the one above, but the 'Suffix1' field, which contains the value 'A', has a yellow background highlight. This indicates that a rule is associated with this item.

## Translator Rules

**Rules** are used to **automate processes** or **transform incoming data** within the label design system. They help streamline data handling by applying predefined logic to incoming information, ensuring consistent formatting, validation, or triggering of actions.

### How Rules Work

Rules operate based on two main components:

#### 1. Test (Condition)

This is the logical condition that evaluates the incoming data.

If the condition is **TRUE**, the rule is triggered.

Examples:

- If the **Hopper equals "Magazine1"**.
- If the **Stain Type is "H&E"**.
- If the **Tissue Type is "Liver"**.

#### 2. Action (Result)

This defines what happens when the test condition is **TRUE**.

Actions can include:

- Modifying or reformatting data.
- Assigning values to different fields.
- Triggering another process.
- Selecting a specific template.

#### Example Use Cases

- **Modifying Data:** Convert data from "Magazine1" to "H1".
- **Template Selection:** If the scanned data includes "SLD", SET Template as "Routine".
- **Run Process:** If an Item equals "Liver", Run the Liver Protocol.

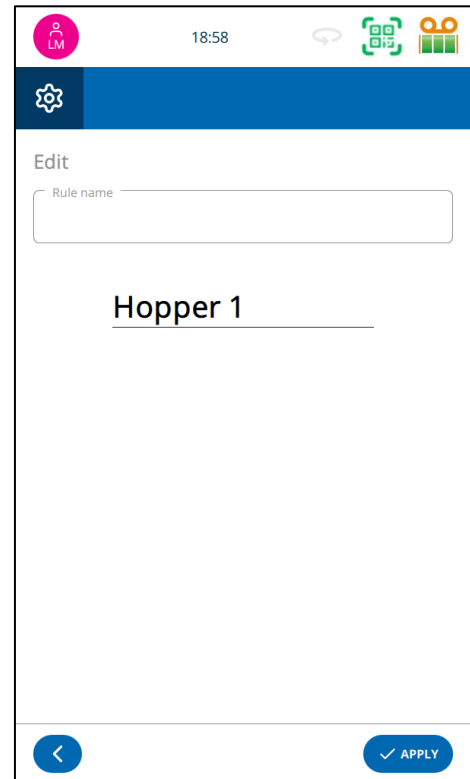
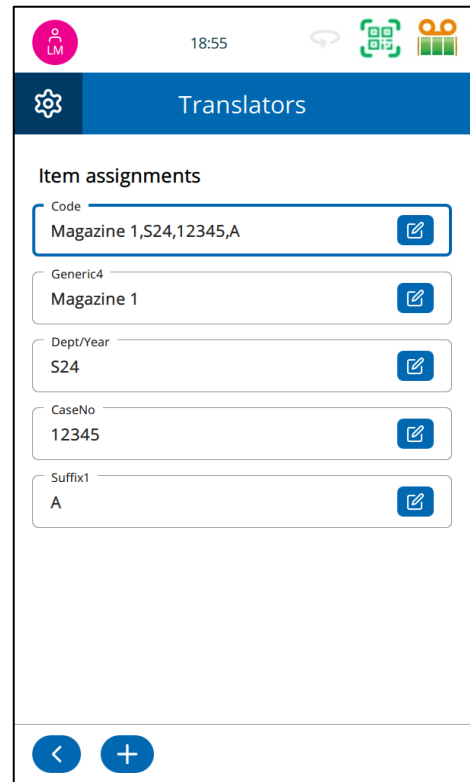
#### Benefits of Using Rules

- **Reduces Manual Errors** by standardizing data handling.
- **Improves Efficiency** by automating repetitive decisions.
- **Enhances Flexibility** in how data is processed and formatted.
- **Supports Custom Workflows** by adapting based on incoming data structure or content.

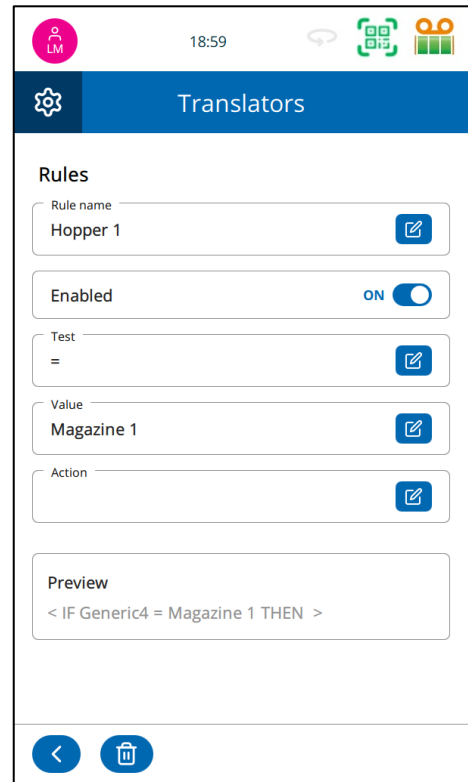
## How to Create a Rule

Rules are configured within a Translator and are assigned to specific data items. Follow the steps below to create a new rule:

- Open the **Translator**.
- Press the **Item Assignments** button to view how data fields are mapped to label objects.
- In the Item Assignments window, **select the data item** you want to apply a rule to (e.g., Patient ID, Object Type, Date).
- Press on the **Rules** button.
- Press the **Add (+)** button to begin creating a new rule.
- Enter **Name** for rule.



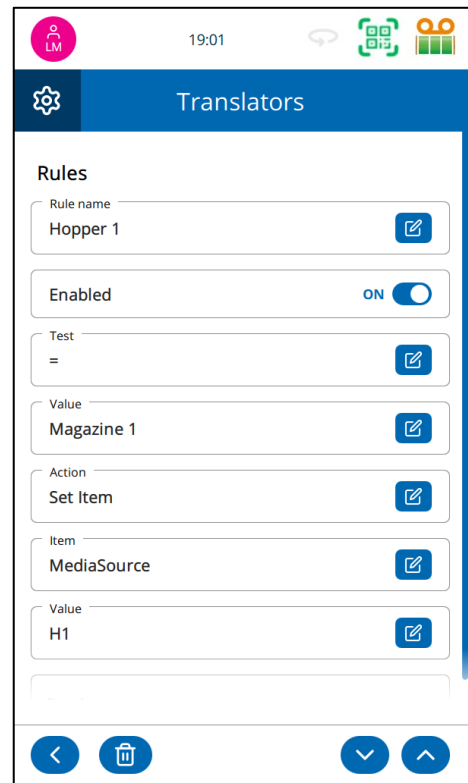
- **Condition/Test** – Define the criteria to trigger the rule (e.g., If field contains "Magazine 1").
- **Value/Target** – Depending on the rule type, enter the new value, action target, or transformation output (e.g., "to H1").



- **Action** – Specify what should happen if the condition is met (e.g., Set MediaSource).
- Once all fields are completed, press **APPLY**.

💡 **Tip:** Ensure conditions are specific enough to avoid accidental matches.

💡 **Tip:** If more than one rule is True, the last rule to apply is used.



# Templates

## Templates Overview

**Templates** are used to organize data fields and barcodes into a formatted layout that is printed on Slides. They allow you to customize the design using fonts, font sizes, and barcode styles to suit specific use cases.

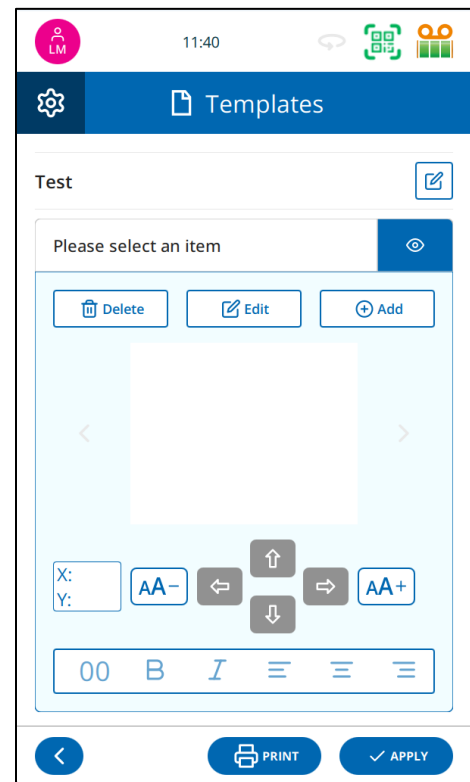
**Tip:** Leave adequate white space around the label edges and barcodes to ensure readability and proper printing.

## Benefits of Using a Translator with a Template

When you select a **Translator** during template creation, the system can automatically populate the template with relevant data items. This reduces setup time and minimizes manual entry errors.

## How to Create a New Template

1. From the **Label Designer** menu, Press **Templates**.
  - o Press the **Add (+)** button.
  - o Enter a clear, descriptive name for the new template.
  - o Press **APPLY**.
  - o Select a Translator.
    - o Choose an existing **Translator** to associate with the template.
    - o The template will automatically populate with items defined in the Translator.
2. The template screen will now display the default items from the translator.
  - o Select each item one at a time to:
    3. Adjust position on the label.
    4. Choose font style.
    5. Set appropriate font size.
6. Press the **Add (+)** button to insert additional items.
7. Choose a data item from the drop-down list to add it to the label design.
8. Choose the desired font and size for the Item.
9. Set the Item Type.




10. Select one of the following:
  - **Normal** – Standard text display.
  - **User** – Field can be modified at the time of label printing.
  - **Auto** – Automatically generated values (e.g., timestamps, serial numbers).
  - **Barcode** – Converts the data into a barcode format.
- Press **APPLY**.



## How to Adjust the Template Design

- Highlight the item on the template.

💡 **Tip:** The highlighted item will have Pink Corner brackets. 

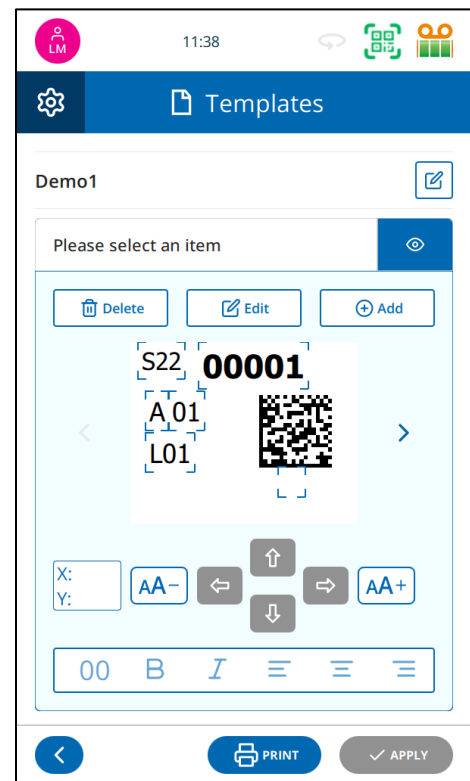
- Use the side arrows to move forward or backward to the next Item. 
- Update the font, size, or change the item type (Normal, User Editable, Auto, Barcode).

💡 **Tip:** You can move the Item up, down, left and right using the arrow pad. 

- The font can be increased or decreased using the font buttons. 
- Select Bold, Italic or Alignment using the Style bar. 
- Press **APPLY** to save the changes.

## To Delete an Item

- Select the item you wish to remove.
- Press **Delete**.
- The item will be removed from the template layout.



## Software

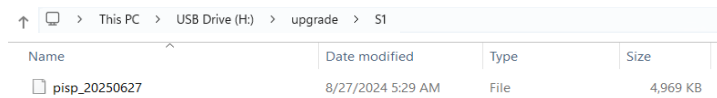
### Software Upgrade

The PiSmart printers support software/firmware upgrades to ensure continued functionality, performance improvements, and access to new features.


Software updates can be applied using the USB port on back of the printer.

### USB Upgrade

- Ensure the upgrade file is provided by StatLab or an authorized representative.
- Copy the update file to a USB flash drive (formatted as FAT32). The file must be copied to the directory: H:\upgrade\S1 where H is the label for the USB drive.




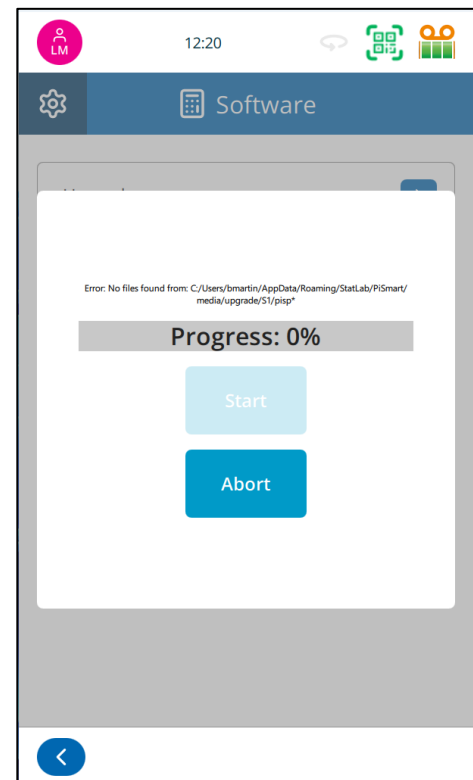
| Name          | Date modified     | Type | Size     |
|---------------|-------------------|------|----------|
| pisp_20250627 | 8/27/2024 5:29 AM | File | 4,969 KB |

- Insert the USB drive into the printer's USB port.
- When a recognized USB drive is inserted, an indication can be seen within the software menu. 
- Navigate to **Settings > Software > Upgrade**.
- Follow the on-screen instructions to initiate and complete the upgrade process.

#### **Warning:**

- **DO NOT power off** or unplug the printer during the update process.
- Only use **official upgrade files** provided by StatLab to avoid system errors or damage.
- After upgrading, the printer will automatically reboot to apply changes.

 **Tip:** Always back up your label templates and user settings before installing an upgrade.



## Configuration Files

Configuration files allow system administrators to back up, restore, or replicate PiSmart CL6 printer settings across multiple devices. This feature helps ensure consistency in environments with multiple units or in scenarios requiring system recovery.

The system files are broken down into two categories, User and Machine settings. The User settings may be common to all printers, while machine settings are unique to individual printers, these are further defined below.

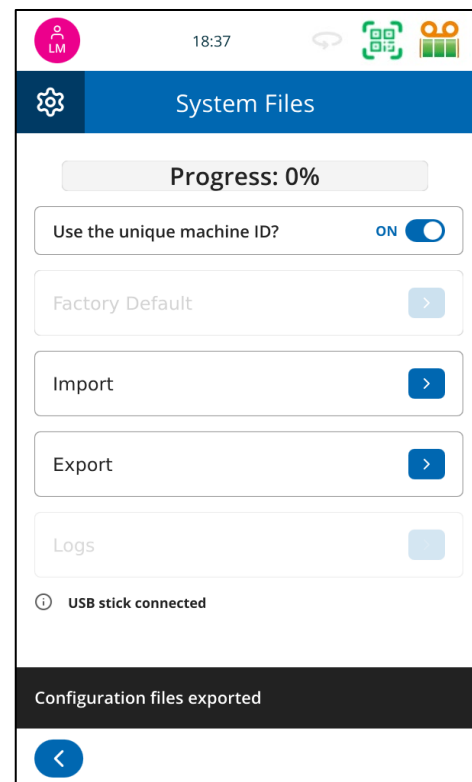
### What might be Stored in a Configuration File?

A configuration file may include:

- User Settings.
- User Accounts and Access Levels.
- Printer Preferences (e.g., sound, display, keyboard).
- Internal Label Designer Items, Objects, Translators, and Templates.
- Language and Regional Settings.
- System Time Settings.
- Machine Settings.
- Network and Connection Settings.
- Heat and Print Settings.
- Motor calibration settings.

The setting labeled **Use the unique machine ID** can be used when importing or exporting data. When active (**ON**) the files will be saved into a folder named with the printer MAC Address.

A folder named “config” must be created in the root of the USB stick prior to using this function.



In the example below, the folder labeled **H:\config\S1\B827EB2C2FAD** which is the printer MAC Address.

| Name                 | Date modified     | Type      | Size  |
|----------------------|-------------------|-----------|-------|
| device_settings.json | 6/28/2025 3:08 PM | JSON File | 1 KB  |
| font.xml             | 6/28/2025 3:08 PM | XML File  | 3 KB  |
| item.xml             | 6/28/2025 3:08 PM | XML File  | 13 KB |
| object.xml           | 6/28/2025 3:08 PM | XML File  | 1 KB  |
| settings.json        | 6/28/2025 3:08 PM | JSON File | 1 KB  |
| template.xml         | 6/28/2025 3:08 PM | XML File  | 8 KB  |
| translator.xml       | 6/28/2025 3:08 PM | XML File  | 3 KB  |
| user.xml             | 6/28/2025 3:08 PM | XML File  | 1 KB  |

If the correct file structure is not present on the USB drive, the file structure will be created as part of the Export process.

If saved in this way, when using import function, the files will only be able to be loaded onto a printer with the same MAC Address.

If the settings **Use the unique machine ID** is set to **(OFF)**, the files will be saved into the I:\config\S1 folder. When saved in this way, the files can be imported to any printer.

**Tip:** If saved in this way, when using import function, the files can be imported to any printer. This is especially useful when cloning one printer configuration to another.

| Name                 | Date modified     | Type        | Size  |
|----------------------|-------------------|-------------|-------|
| B827EBF31242         | 6/28/2025 3:08 PM | File folder |       |
| B827EBF31243         | 6/28/2025 3:08 PM | File folder |       |
| B827EBF31244         | 6/28/2025 3:08 PM | File folder |       |
| B827EBF31245         | 6/28/2025 3:08 PM | File folder |       |
| device_settings.json | 6/27/2025 6:37 PM | JSON File   | 1 KB  |
| font.xml             | 6/27/2025 6:37 PM | XML File    | 3 KB  |
| item.xml             | 6/27/2025 6:37 PM | XML File    | 13 KB |
| object.xml           | 6/27/2025 6:37 PM | XML File    | 1 KB  |
| settings.json        | 6/27/2025 6:37 PM | JSON File   | 1 KB  |
| template.xml         | 6/27/2025 6:37 PM | XML File    | 8 KB  |
| translator.xml       | 6/27/2025 6:37 PM | XML File    | 3 KB  |
| user.xml             | 6/27/2025 6:37 PM | XML File    | 1 KB  |

## Exporting the System Files (User configuration)

When exporting System Files, all system files will be exported to the USB drive.

### To export a configuration file:

1. Insert a USB flash drive (with proper configuration) into the printer.
2. Navigate to **Settings > Software > System Files > Export**. A notification should appear confirming the files were transferred.

The configuration file will be saved to the USB drive.

## Importing a Configuration File

### Import saved configuration files for a specific printer:

1. Insert the USB drive containing the file into the printer.
2. Navigate to **Settings > Software > System Files > Import**.
3. Set **Use the unique machine ID** to ON
4. Select **All Files** or **User ONLY files** (if unsure, select User Only)
5. The printer will automatically reboot the printer to apply the update.

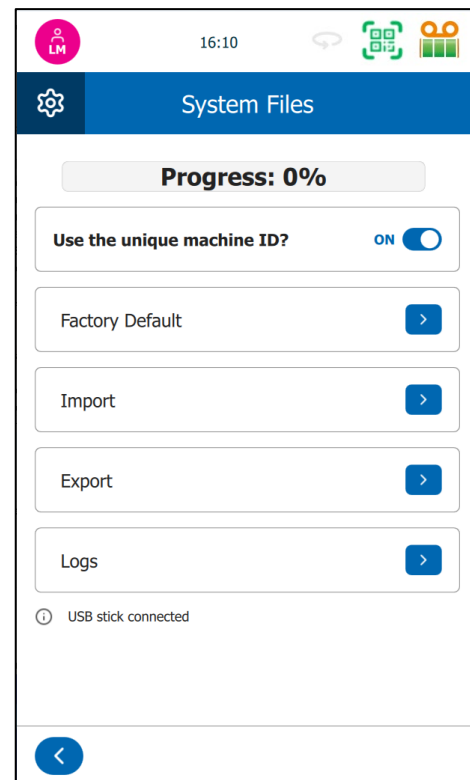
**Warning:** Importing a configuration file will **overwrite all current settings** on the device.

**Logs** are files that record events, actions, or transactions that occur within a system. They can be used for troubleshooting printer software issues.

To Download event logs:

1. Insert the USB drive containing the file into the printer.
2. Navigate to Settings > Software > System Files
3. Set **Use the unique machine ID** to ON
4. Press the Logs button
5. A message will be displayed confirming the files were transferred.

The files will be copied to a folder labeled with the MAC Address of the printer. The files will be dated within the file name; the date can be read as pyramid.log\_ddmmyyyy.log.



| Name                     | Date modified     | Type          | Size   |
|--------------------------|-------------------|---------------|--------|
| pyramid.log_27062025.log | 6/28/2025 3:08 PM | Text Document | 234 KB |
| pyramid.log_28062025.log | 6/29/2025 4:50 PM | Text Document | 40 KB  |
| pyramid.log_29062025.log | 6/29/2025 4:50 PM | Text Document | 103 KB |

## Languages

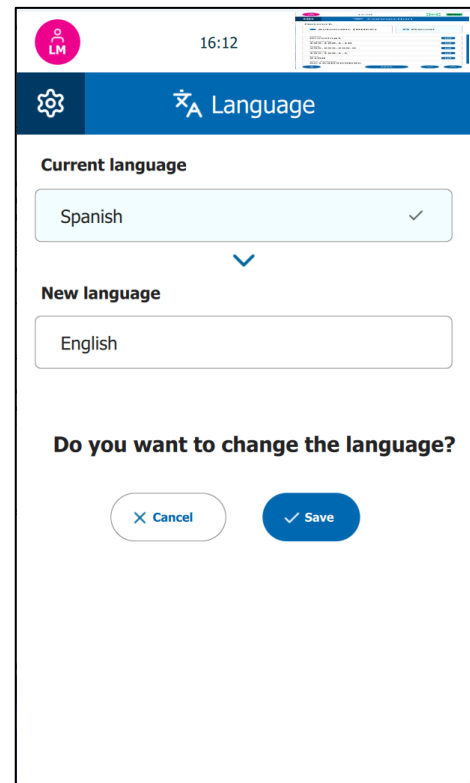
The PiSmart printers support multiple interface languages, allowing users to operate the device in their preferred language.

By default, the printer is set to **English** upon shipment. Users can change the display language at any time through the Settings Menu.

### To change the language:

1. Navigate to **Settings > Language**.
2. Select the desired language from the list of available options. (Current choices are English, French, German, Italian and Spanish).
3. Confirm the selection by pressing **Save**.
4. The interface will update immediately to reflect the new language.

**⚠ Note:** The number of available languages may vary based on firmware version and regional configuration.



# Troubleshooting & Support

## Slide Requirements

To ensure optimal print quality and long-term reliability, only approved consumables listed in Appendix A should be used with the PiSmart S1 printer.

**⚠ Important:** Use of non-approved slides may result in:

- Poor print quality
- Reduced print durability
- Damage to printer components

If alternative consumables are to be used, it is the responsibility of the end-user laboratory to fully validate their compatibility and performance with the PiSmart S1 system.

## Ribbon Burn – Possible Causes

Ribbon burn occurs when excessive heat is applied during the printing process, resulting in visible tape damage or smudging on the printed Slide or slide.

To alleviate ribbon burn:

- Run the Print Head Recovery process.
- Reduce the Heat Setting to a lower level.
- Use a known high-quality Slide or slide to confirm proper printer operation.

Common Causes of Ribbon Burn

Use of an incorrect ribbon type

- Use of low-quality Slides or slides
- Uneven print surface: May cause localized burning where the print head does not make uniform **contact**
- Debris buildup on the print head

Service-Level Checks (Technician Only)

- Incorrect resistance value configured for the installed print head
- Mismatch between actual print head resistance and value entered in printer settings

**⚠ Note:** Ribbon burn should always be addressed promptly to avoid ongoing print issues or damage to printer components.

## Print Quality Troubleshooting

There are no strict rules regarding print positioning, font style, size, boldness, or darkness settings. These variables can significantly affect print quality and cause anomalies. Some trial and error may be required to achieve optimal results.

Tips for Improving Print Quality:

- Increasing the heat may not improve print quality and could result in increased ribbon break or burn through.
- Ribbon burn often indicates that the heat setting is too high, but it may also be caused by:
  - Bold fonts placed too close to the print area edge
  - Barcodes positioned near the edge of the print zone
  - If the ribbon consistently burns in a particular location (e.g., under bold text), change the font to normal weight and retest.
  - Centering text and barcodes within the print area helps avoid burning and inconsistent prints.

## Print Head Cleaning

Visit the StatLab.com website for videos on print head cleaning and other important information

The print head must be cleaned occasionally to maintain optimal print quality.

### When to Clean the Print Head

Regular maintenance of the print head is essential for ensuring optimal print quality and prolonging the life of the printer. The print head should be cleaned under the following conditions:

- **If ribbon burning occurs** – This may indicate debris buildup or excessive heat.
- **If the printing ribbon was installed or run backward** – This can leave residue or cause uneven wear on the print head.
- **If print quality degrades** – Symptoms such as smudging, streaking, or blurred characters suggest it's time to clean the print head.

Refer to **Cleaning Instructions** for step-by-step instructions.

## Cleaning Instructions:

**Step 1:** Power off the printer.

**Step 2:** Remove the ribbon.

**Step 3:** Discard any used ribbon on the take-up spool.

**Step 4:** Move the print head to the center by gently pushing it up or down.

**Step 5:** Break the end of the Pop-Ule swab by pinching the tube.

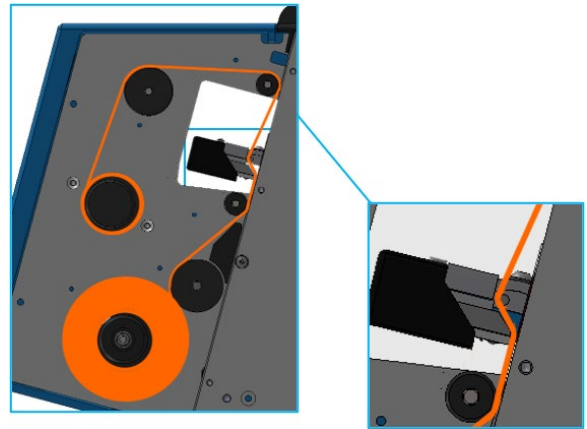
- Alternatively, use a cotton swab dipped in 100% alcohol.

**Step 6:** Clean the printing edge with the dampened swab using a back-and-forth motion to remove any debris or ribbon residue.

**Step 7:** Rethread the ribbon.

**Step 8:** Power the printer on.

- ⚠ Note:** Use only 100% alcohol and approved swabs to avoid damaging the print head.



## Print Head Recovery

Use the Print Head Recovery Process if ribbon burn is observed:

### Recovery Steps:

**Step 1:** Clean the print head (see Section 7.4).

**Step 2:** Reduce the heat setting:

- Press the Settings button.
- Press the Printer button.
- Press the Heat Settings button.
- Press the Edit button (pen icon).
- Use the + and – buttons to adjust the heat setting to 1.
- Press the Save button
- Press the back button.

**Step 3:** Print a slide.

**Step 4:** If the print is still too dark or smudged, print several additional slides until the print becomes lighter.

**Step 5:** Once the print is acceptable:

- Gradually increase the heat setting.
- After each adjustment, print a few slides until printing is dark but not damaging the ribbon or causing smudging.

**⚠ Note:** The final heat setting will typically be lower than the original setting.

## Cleaning the Touchscreen

Clean the touchscreen only when necessary. Because it is a sensitive touch interface, it should never be cleaned while the printer is powered on.

Cleaning Instructions:

**Step 1:** Power the printer off.

**Step 2:** Clean the screen using soft cloth and glass cleaner or alcohol.

**Step 3:** Power the printer on.

**⚠ Note:** Always use non-abrasive cloths and avoid applying liquid directly to the screen.

## Icon / Button Glossary



Settings



Delete



Sequence



Protocol



Edit



Down



Up



Home



Back to Settings



Delimiters



Scanner Inactive



Scanner Ready



Increase



Decrease



AutoPrint Toggle Off



AutoPrint Toggle On



Toggle Button (off)



Toggle Button (on)



Ribbon Indication



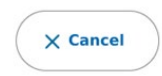
Save



Set



Apply



Cancel



Add User



Print



Print All



Stop