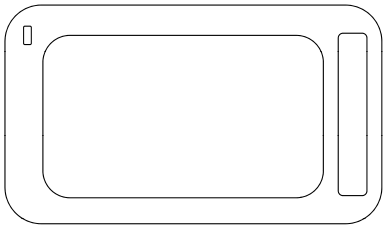
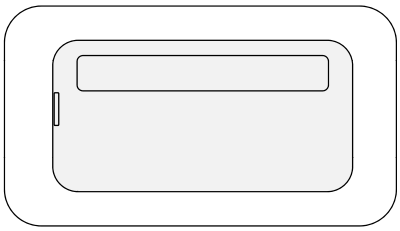
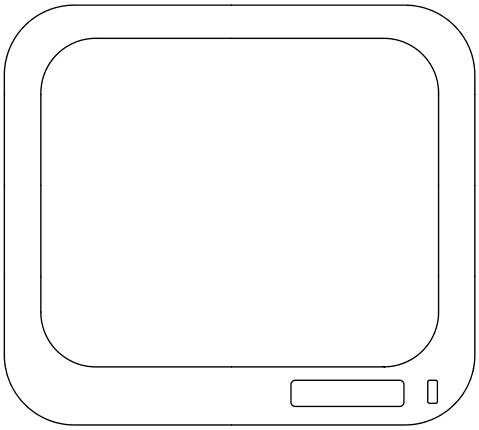
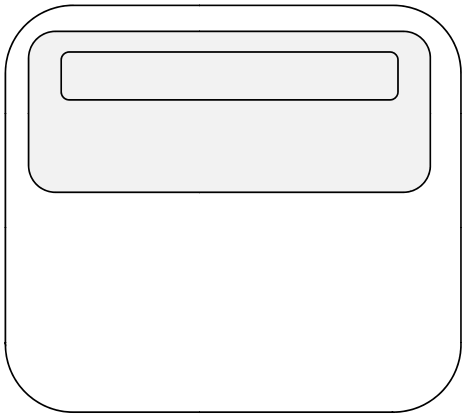




BL201





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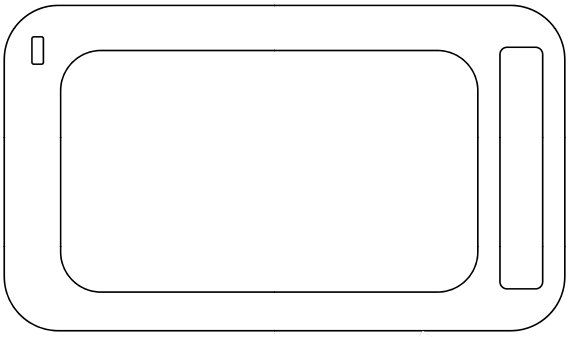

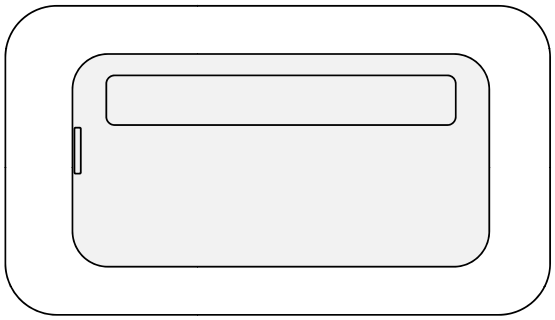

BL202/BL203

Implementation Process of SUNMI ELECTRONIC SHELF LABEL(ESL)

Shanghai Sunmi Technology Co.,Ltd.

Version: V1.1

Sep. 15, 2019

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Revision History

Issued Date	Revised Contents	Version
2019-07-28	Draft	V1.0
2019-09-15	English version	V1.1

FCC Statement
Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

RF warning :
The device has been evaluated to meet general RF exposure requirment.The device can be used in portable exposure condition without restriction.

1 Preliminary Work

Before implementing a formal deployment, the following preparations need to be completed:

1. Business cooperation process;
2. Statistics on the number and type of store ESLs;
3. Statistics on the installation mode of store ESLs (the type and quantity of guide rails and clamps);
4. Location determination of the access point installation (focus on the network wiring);
5. Cloud deployment mode confirmation (SaaS or private cloud).

For the specific preparation process, please see implementation preparation collected in the separate project documentation.

2 Product docking

It is necessary to start the docking of product information as soon as possible, after the confirmation of business contract and the confirmation of product docking demand.

It takes about two weeks for product information docking.

The general process of product information docking is as follows:

1. SUNMI, the software partner shall discuss docking requirements and release technical documents;
2. Confirm the docking plan and schedule the project;
3. Developing docking interface and launching after multiple environmental tests.

The deployment and implementation of equipment shall start after product docking.

See separate product docking documents for specific product docking procedures and instructions.

3 Equipment Installation

3.1 Installation Preparation

Tools to be carried with during installation:

1. Rags, used to clean shelves
2. Big scissors or cutting machines for cutting guide rails
3. Electric drill for fixing equipment

3.2 Access Point

3.2.1 Introduction

The access point (AP) for SUNMI smart ESLs is used to connect ESL equipment with SUNMI digital store. The image and the instruction emitted by the digital store server are transmitted to the wireless access point through the Ethernet, and the access point is further distributed to the ESL through the wireless communication of the 2.4 G frequency band, so that the cloud change price and the ESL refresh can be realized.

The following table shows the basic specifications of the wireless access point for smart ESLs:

Product name	Electronic shelf label AP
Product model	BL010
Marketing model	SLAP1
Input Power	DC 5V/1A or PoE
PoE Specification	IEEE 802.3af
Ethernet interface	RJ45 100M
Wireless communication band	2.4GHz
Oversize	156mm*156mm*25mm
Installation	Ceiling/ Wall/ Desktop Placement
Coverage radius	25m
Supported quantity of ESLs	Up to 10,000 single AP

The relevant interface description on the wireless access point for smart ESLs is as follows:

	Ports	Description
1	Power light	● White flicker: during access point startup ● Normally White ON: access point is connected to the server and is working properly ● Normally Red ON: access point cannot connect to the server

2	Reset button	Press for 5 seconds to restore the access point to the factory state
3	Internet port	RJ45 Ethernet port with indicator light, support for PoE power supply
4	Power port	Power adapter port to support independent power supply
5	Installation hooks	Bring its own detachable hooks so that the access point supports a variety of installation methods

3.2.2 Base Installation

3.2.2.1 Power Supply Mode

SUNMI wireless access point for smart ESLs supports power adapter and PoE power supply, which power supply mode needs to be determined by in-store environment and installation mode.

The power adapter line is 2 meters long. Use the plug board if it is not long enough, while strictly forbid to extend the power cord by yourself.

The installation of access point adopts ceiling and hanging-wall styles, but when the power cord of adapter is not long enough, PoE can be used to power the access point. PoE power supply needs to apply a separate PoE module or PoE switch, and the network line connected by PoE module / switch can be plugged directly into the access point to supply power to the access point.

Note: it is strictly forbidden to use both power adapter and PoE power supply at the same time.

3.2.2.2 Internet Access

SUNMI access point for smart ESLs supports DHCP and static IP.

If it is only a single access point, ensure that the access point can connect to the cloud server or the local server.

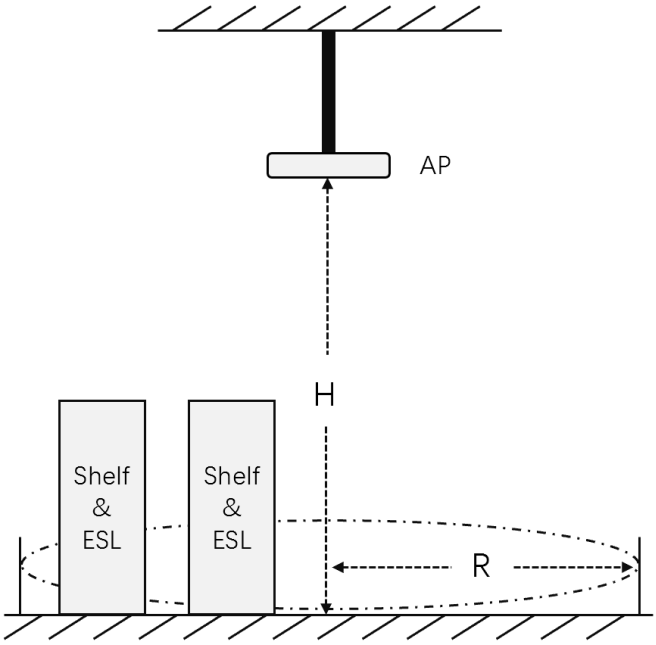
If there are more than one access point, it is necessary to let each access point be located under the same LAN in order to realize the network roaming of access point and labels.

3.2.2.3 Installation and Fixation

The fixation of ESL access point supports ceiling, hanging walls and desktop placement.

It is recommended to install on the ceiling, which can get wider signal coverage; Wall hanging and desktop placement are only suitable for the cases where the labels are less or close to the access point.

For ceiling installation, the installation height is recommended as 3~3.5 meters (can be adjusted by metal universal rod). Max coverage radius of a single access point is 25 meters (laboratory test results), and 15 meters is recommended.



If multiple access points are needed, it is necessary to ensure that each access point signal has an overlapping area, and each label is at least within the coverage of more than one access point.

If there are walls, columns, air pipes, refrigerators, etc., between the access point and the label, the wireless signal will be affected and attenuated to a certain extent. When the access point is installed, it should avoid the above objects as far as possible. If it cannot be avoided, it can be regarded as reducing the coverage radius of the access point.

The signal frequency band of the ESL access point coincides with the band of 2.4G Wi-Fi. If the ESL access point and the wireless router are installed together, the two will interfere with each other, so the two should be installed separately.

Actually, when installing the access point, we also need to consider the number of ESLs that the access point can support. Single SUNMI wireless access point for smart ESLs supports a maximum of 10000 pieces of ESLs. But considering the refresh speed of batch push and system redundancy, it is recommended that one access point be allocated for every 3000 pieces of labels. The installation distance between access points can be adjusted accordingly.

3.2.3 Access Point Configuration

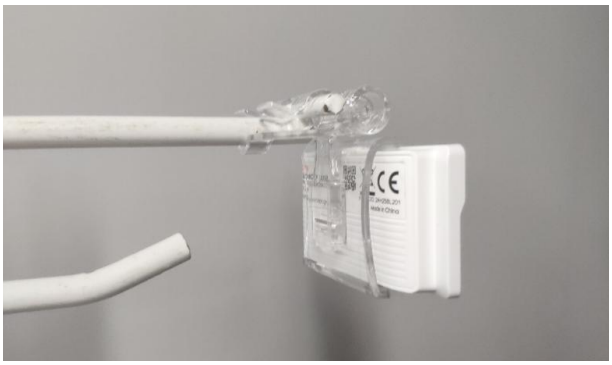
After all ESL access points are installed, it is necessary to use SUNMI assistant APP to configure each access point, including the Internet access mode and name of each access point. After configuration, the tie-up between access point and store will be completed to realize the networking of access point, so that the labels can be connected to the access point.

Detailed configuration refers to the implementation process documentation of software

operations.

3.3 Labels and Accessories

The label cannot be installed independently, it needs to be installed with various types of accessories to the shelf, basket rack and pile head.



4 Software Operation

Software configuration and usage include operations on the SUNMI digital store website and on the SUNMI ESL APP of PDA.

In SUNMI digital store, you need to complete:

1. Register an account in SUNMI digital store;
2. Set up docking of product information;
3. Design template for ESL;

On the SUNMI ESL APP of PDA, you need to complete:

1. Configure the Internet access mode of the AP;
2. Bind ESL and product;
3. Unbind ESL and product;
4. Search product.

Check below for specific procedures.

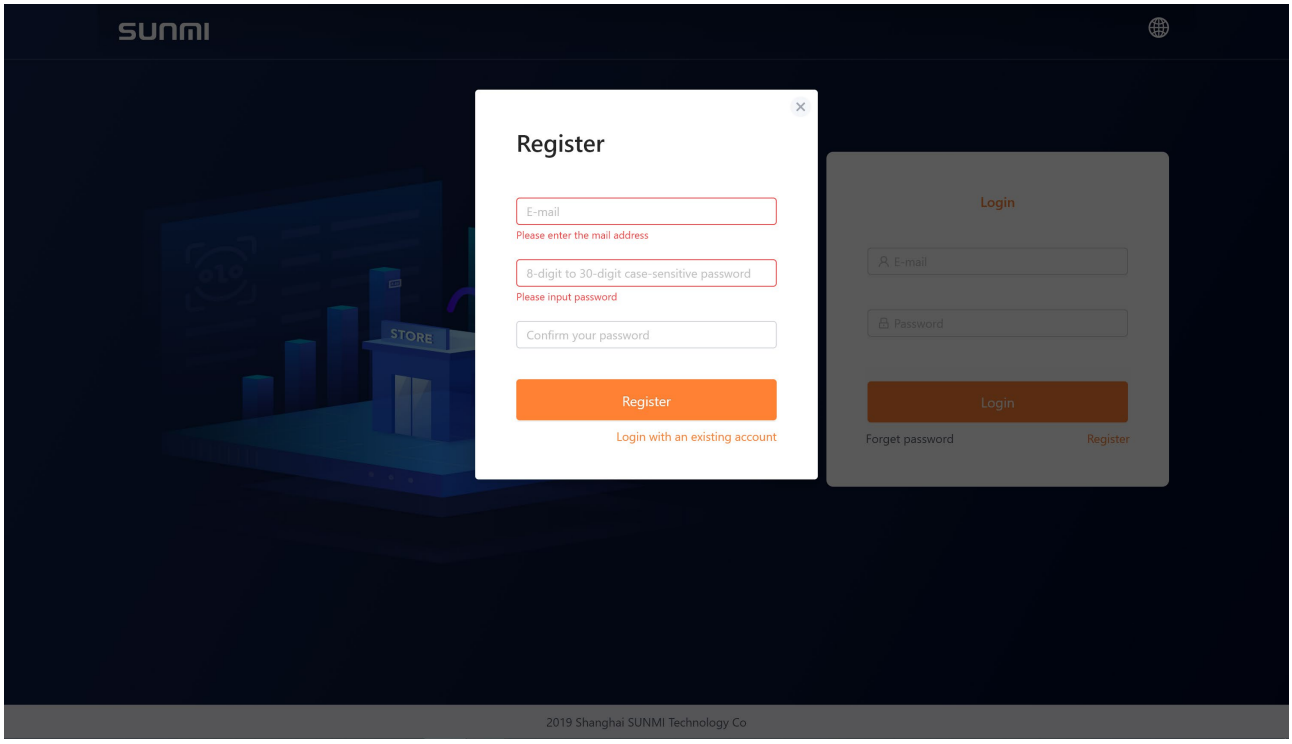
4.1 SUNMI digital store

The operations of SUNMI digital store need to be complete before the deployment of equipment installation.

4.1.1 Register an account in SUNMI digital store

Visit website store.sunmi.com through Chrome, Firefox, QQ browser and 360 browser on computer to register account. If already registered, step over to sign in.

Create the company and store after sign-in. Step over if the account already created.

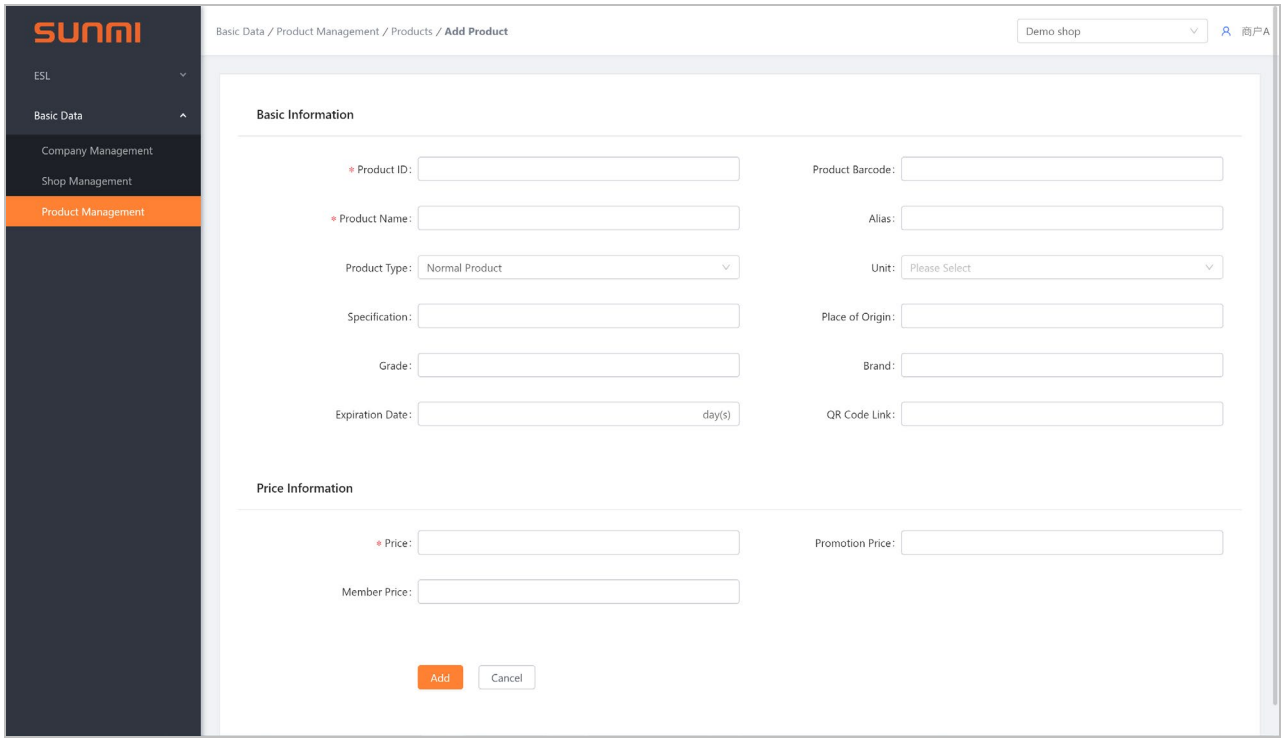


4.1.2 Set up docking of product information

Enter into [Basic data > Product management] from menu on the page left, you can see the product list, and all products with bindable ESLs are listed here.

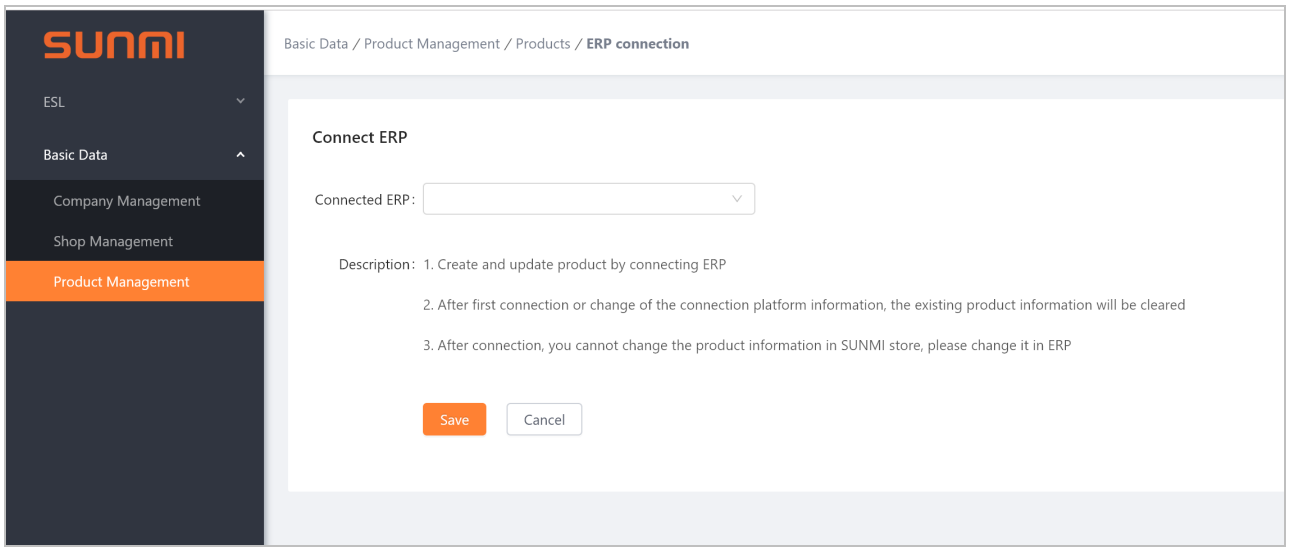
In the prior test or trial, you can **input information and create product manually**, or modify product information manually.

In the formal usage, product library is generally necessary to dock with ERP/POS software to realize auto-import, revise and delete.



Enter the [Docking ERP] function, select the ERP platform that has been docked in the previous work, and input the authentication information (which can be obtained on the page under some part of the ERP software, and some other part needs to be obtained by the ERP manufacturer). The storage can complete the docking of the product library and start drawing the products.

After setting up ERP docking, the product library of the digital store will get all the product information from the ERP through the API interface, and it will synchronize to the SUNMI digital store after each modification in ERP, and then synchronize to the ESL.



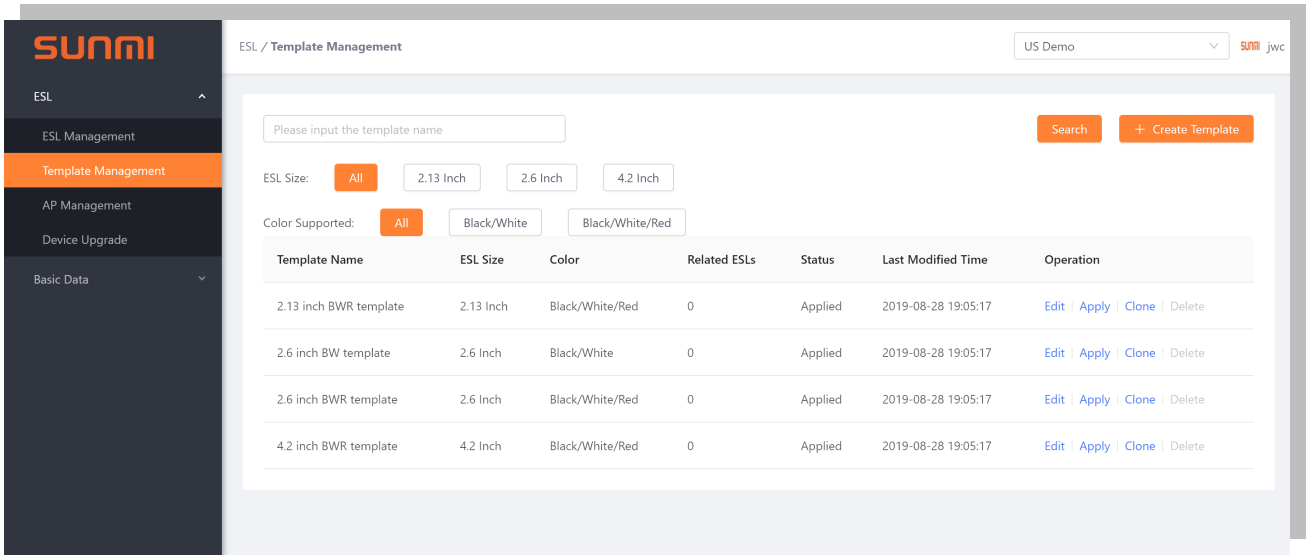
4.1.3 Template design

Template is to present product information for ESL. Users can present through user-defined function.

Enter [ESL > Template Management], you can edit existing templates, or create new templates for design.

Templates are classified according to size and color. an ESL of a certain size can only use a template of that size, a constant temperature ESL can use black and white red, black and white templates, and a low temperature ESL can only use black and white templates.

Suggest to complete the validation of template in advance.



4.2 SUNMI ESL APP

The operations of SUNMI ESL APP are under equipments deployment.

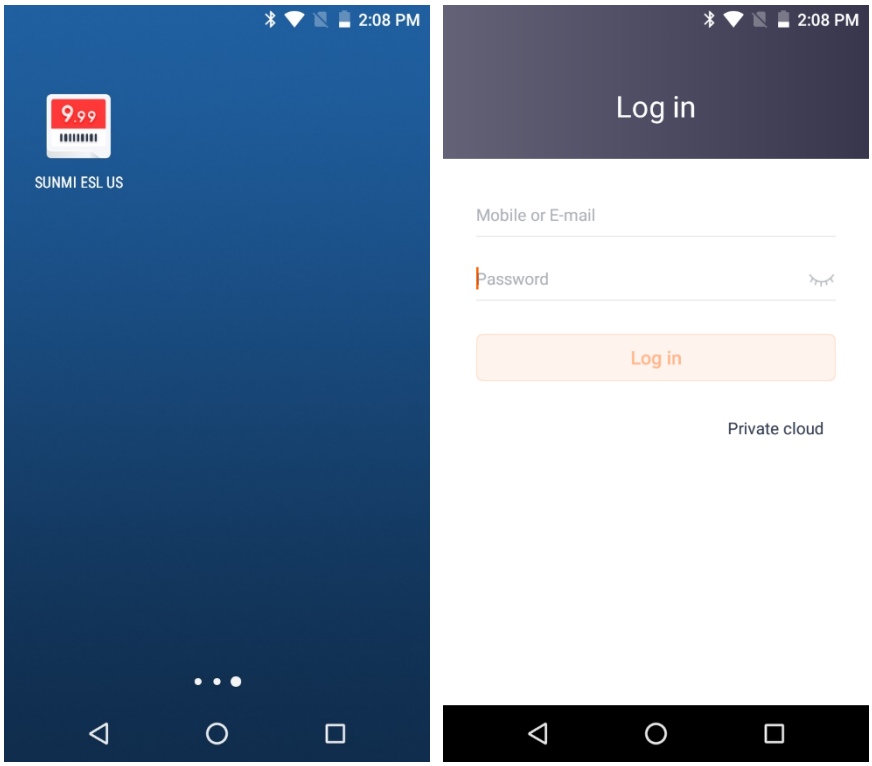
Please acquire SUNMI ESL APP in SUNMI APP Store, and the APP is functioning in SUNMI L2 only.

4.2.1 Access point configuration

The access point configuration shall be carried out before ESL installation when the access point installation is completed, to make all ESLs easily to connect access point successfully at the time of ESL binding.

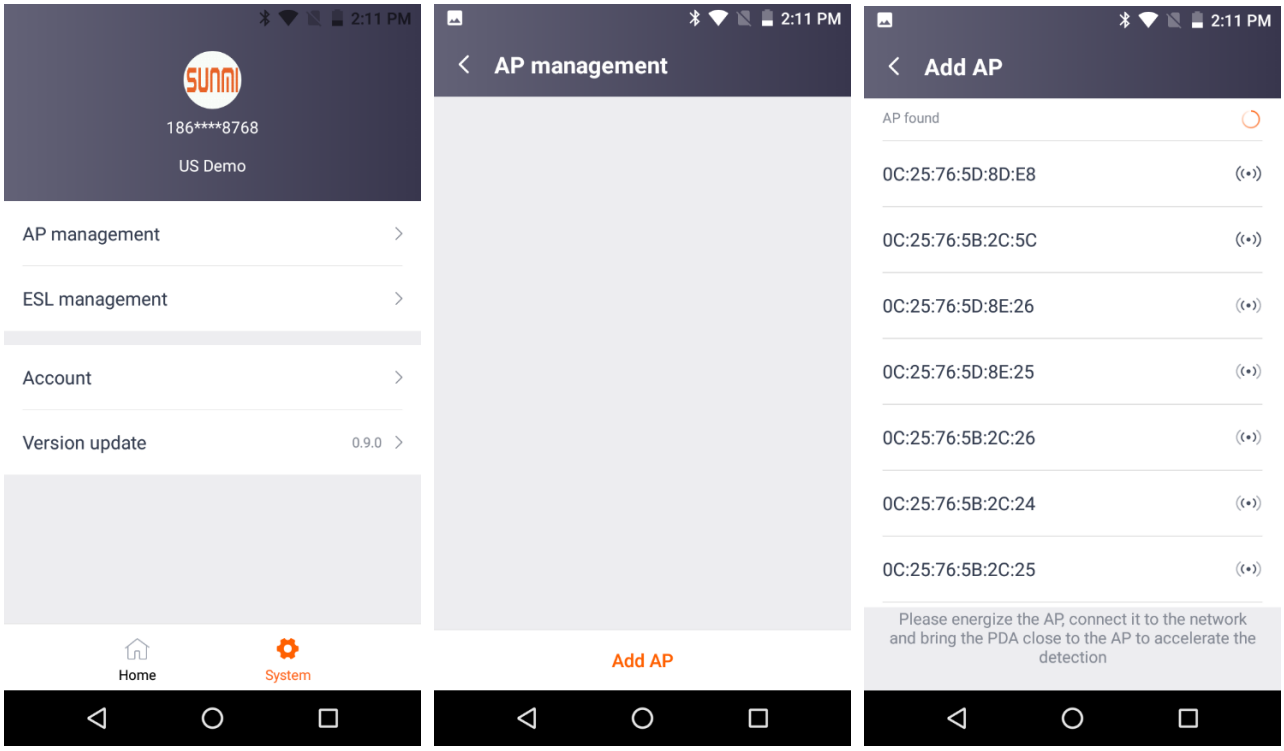
After completing the installation of the access point, energize it, insert the cable, then wait for the light is normally on white or red. At this time, you can add a configuration access point by using the SUNMI ESL APP on L2. The concrete steps shall be as follows:

1. Start the SUNMI ESL APP, and sign in with the account of SUNMI digital store.



2. Go to the APP system page, click [AP management > Add AP], then start searching access point signal with l2.

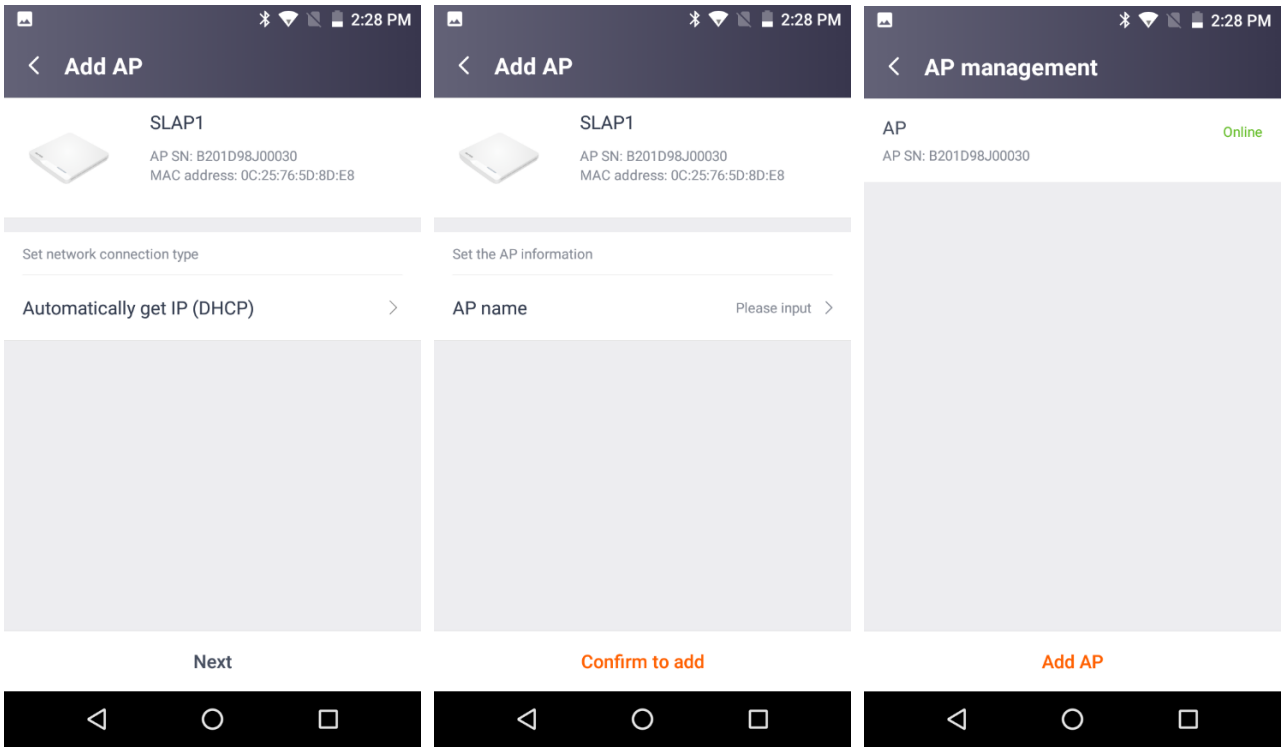
In order to ensure that the signal strength of the access point is strong enough to be connected by L2, it is necessary to search as close as possible to the access point.



3. Select the access point that needs to be added (according to the signal strength or MAC address, the scanned MAC address is the same as the MAC address on the bottom nameplate of the access point) to enter the process of the access point adding and configuring.

First of all, you need to set up the access point Internet access mode, you can choose to automatically obtain IP (DHCP) or manually input IP (static IP). The automatic acquisition of IP (DHCP) mode can be used generally.

After setting the Internet access mode, set the access point name (required), click confirm add to add the access point to the current store to complete the binding.



When the access point configuration is completed, the added access point will be seen in the access point list, and if the access point status is online, it is in normal operate. If the access point is offline, please check the connection status of power supply and the network, and try to reconfigure the access point access mode.

For the added access point, you can choose to manage in the access point list, modify the access point name, delete the access point, or modify the access point access mode.

To modify the access point access mode, you need to reconnect the access point, please approach the access point and operate again. The modification is the same as access point adding.

4.2.2 ESL and product binding

After the ESL is installed, you can start binding the ESL to the products.

Enter the binding page from the APP home page: select ESL, select template, select product,

and complete binding.

[Select ESL] can be achieved through the bar code on the L2 ESL (the bar code is the unique identified ID), or through NFC by close L2 to the ESL to obtain the ID.

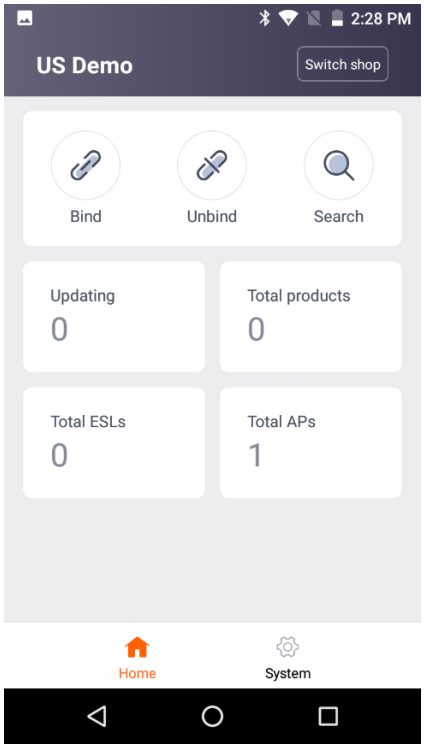
SUNMI ESL support NFC, which can obtain the ESL ID through NFC on the PDA, or reset the ESL device.

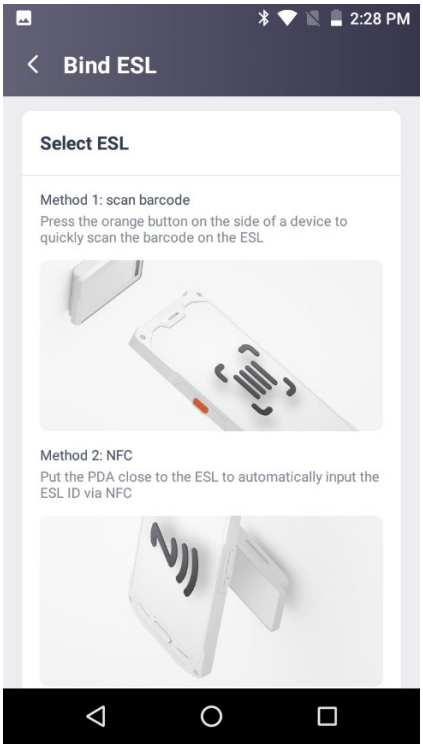
[Select Template] is to choose the designed template in SUNMI digital store previously.

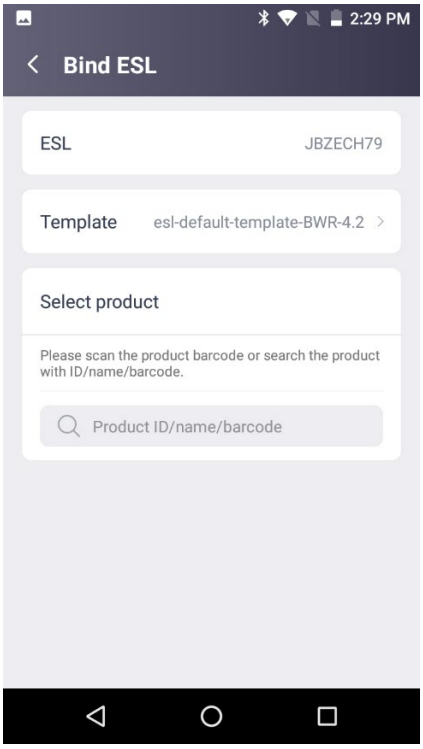
[Select Product] can be realized directly by scanning product bar code. If there is no bar code, you can enter the product number / name / bar code to select the product.

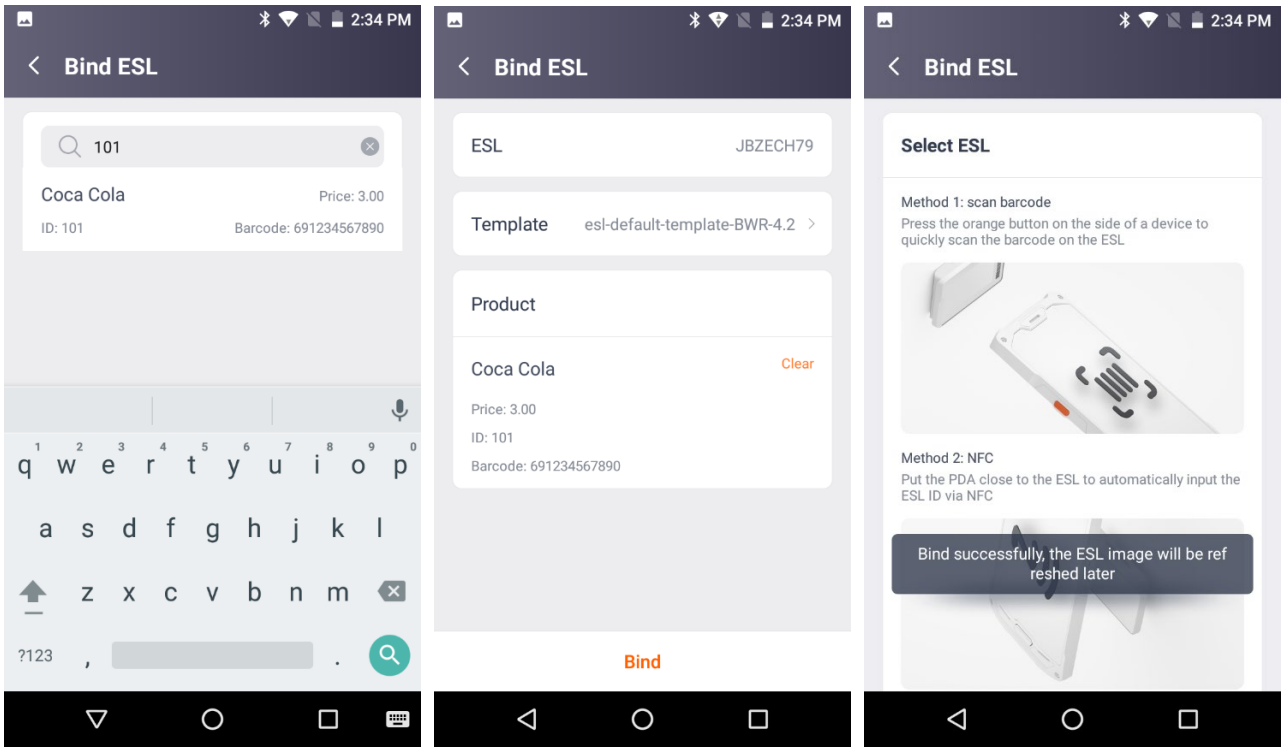
After selecting the product, template and ESL, click on “Bind” to bind the product with the ESL, and jump to the ESL selection page to facilitate the rapid binding of the next ESL with the product.

Under normal circumstances, within half a minute of binding completion, the ESL will refresh and display the product information with the selected template.









After completing the binding of all products and ESL, return to the home page of the SUNMI ESL APP. When the number of ESLs to be pushed becomes 0, that means all the ESLs are completed and the ESL system is deployed for the first time.

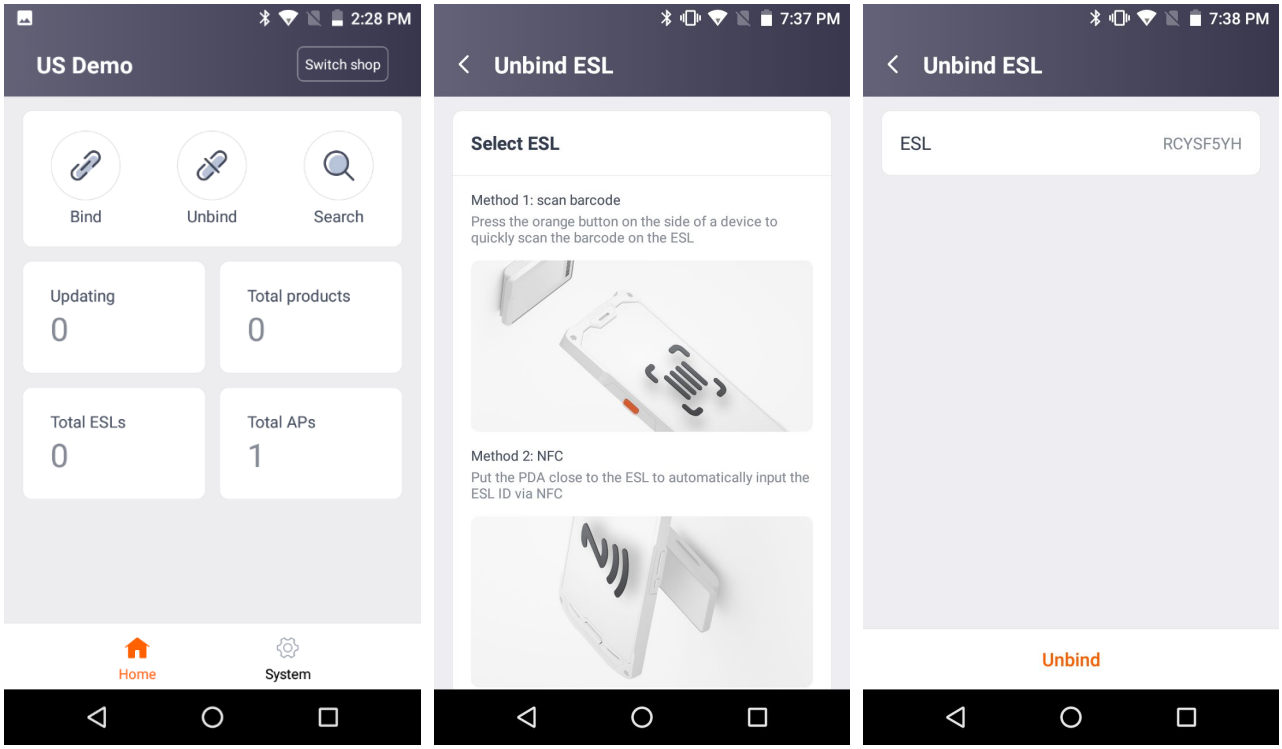
If it is any modification in need later, directly modify in the ERP, then the product information will be immediately synchronized to the SUNMI digital store, and sent to the ESL.

If the products move location and no longer correspond to the ESL, you need to rebind or unbind directly according to the above process.

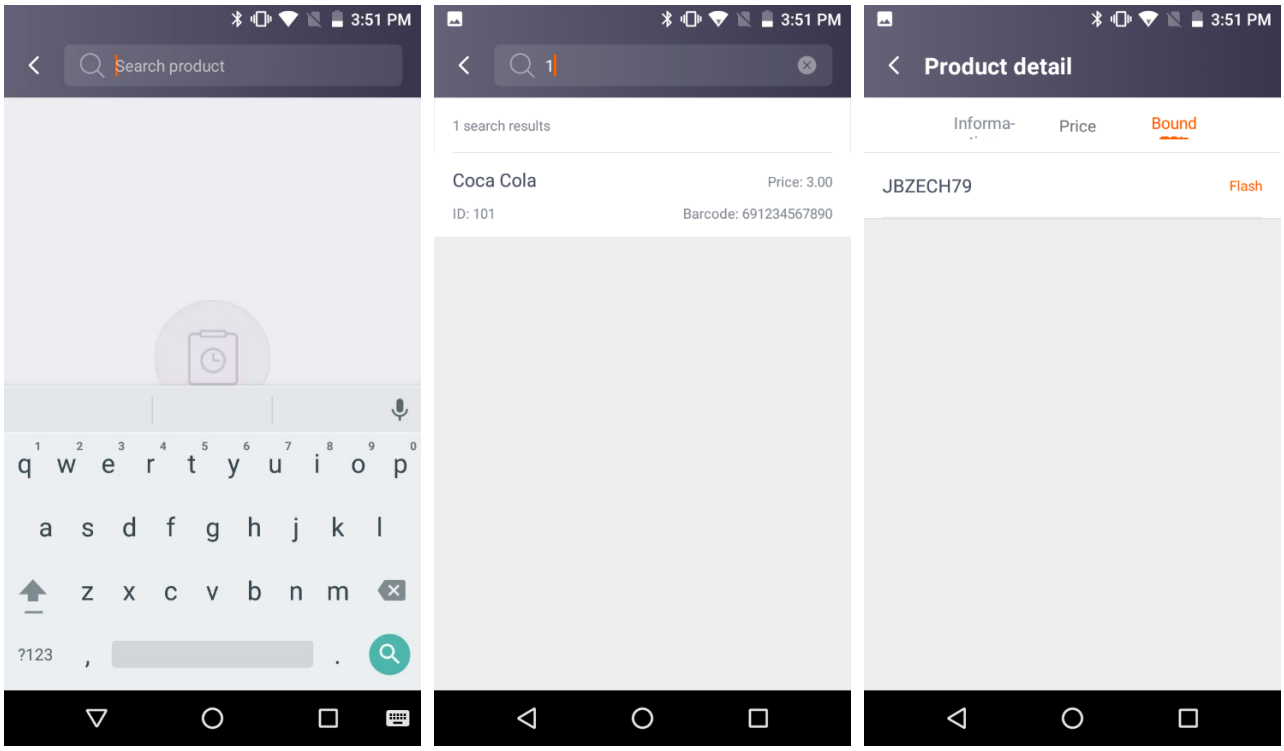
4.2.3 ESL unbinding

If you do not want an ESL to display product information, you can unbind the ESL, THEN the ESL will display the factory default picture.

Unbind method is similar to binding, using code sweeping or NFC to select the ESL, and click unbind to complete work.



4.2.4 Product inquiry

Inquire through the product number / name / bar code, and the bar code of the product binding ESL.

Enter the product details page to see the product information, as well as the ESL bound to the product, click on the flash lamp to allow the ESL flashing immediately.