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Version update point:

→ Ver 1.0 initial version

→ Ver 1.2 WEMS electronic price tag management system operation mode optimization/  
WTE Link App function interface optimization

# E series product electronic shelf label system manual

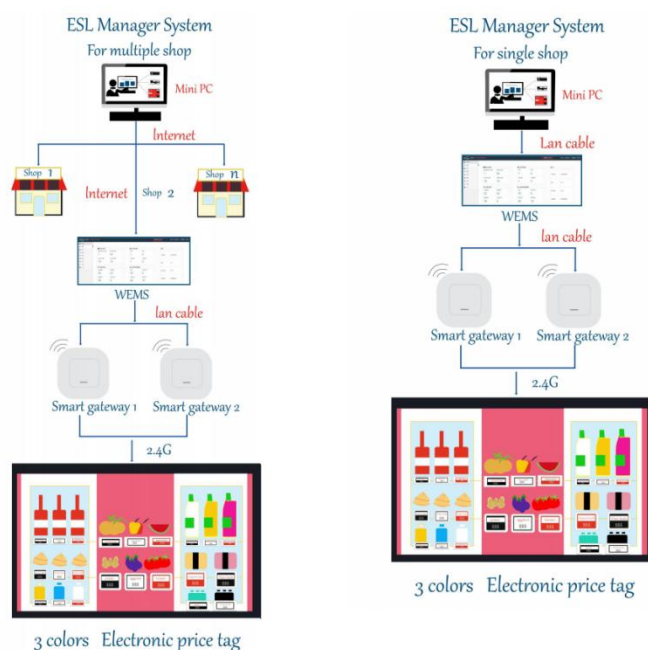
## 1、 Overview-What is E Serial Product ESL System

This manual mainly introduces the electronic price tag system version and usage instructions of E series products. The realization of its function depends on four factors:

- 1) WEMS electronic price tag management software
- 2) Gateway
- 3) WTE Link mobile APP
- 4) Product electronic price tag equipment

The whole process is as follows: Bind product information and equipment on the mobile APP WTE Link→price tag management system WEMS (can be deployed in a cloud server or local LAN) to package product information data→send the data package to the gateway through Ethernet→data transmission After arriving at the gateway, the data is sent to the electronic price tag through 2.4G wireless communication technology. In this way, the data changed in the price tag management system is transmitted to the electronic price tag, and the price and related information on the price tag are updated. Please note that the implementation of the price tag function needs to keep the gateway powered on and connected to the network.

The IP address of the price tag management system is fixed. When you configure the gateway, you need to enter the IP address of the price tag management system, so that the gateway can communicate with the price tag management system. The transmission between the gateway and the price tag management system is through Ethernet, and the transmission technology between the electronic price tag and the gateway adopts 2.4G wireless communication technology. You can manage one or more stores through the price tag management system. The following system structure diagram is for your reference and easy to understand.



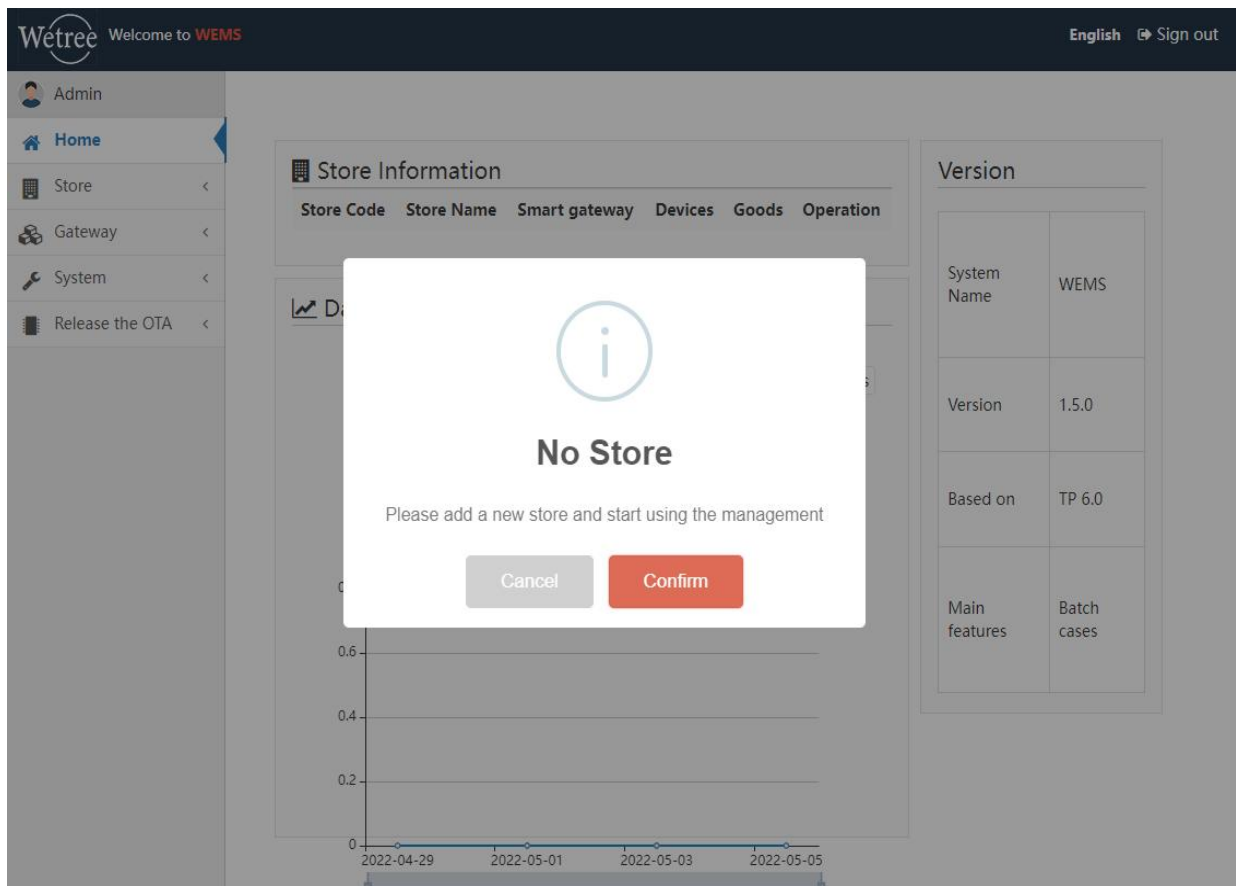
## 2、The use of electronic price tags for E series products

This chapter will introduce the quick use of the entire system, and the introduction of the first use after the user deploys the system

### 2.1 Login to WEMS price tag management system

Step 1: Open Google Chrome, enter "127.0.0.1:8080", log in to the administrator account to enter the WEMS price tag management system, the default administrator name: admin Password: admin123

Step 2: After entering the WEMS management system, it will prompt that there is no store, click "Confirm" to jump to the store creation page (as shown in the figure)



Step 3: Enter the store page, click the "Add" button, enter the store account name, store alias, store account password, and then create a store (please note that this account will be used for the store's information management and APP login, and does not have management member permissions)

Add

User : zhansan

Store Name : store1

Customer Code:

Password : \*\*\*\*\*

Cancel Confirm

Step 4: Enter the gateway page, you will see the gateway information connected to the management system, check the gateway, click the "Add a Smart gateway" button, and select "store Name" as the store you just created (store1 store was created in the previous step, so This step assigns the gateway to the store), click "Confirm" to confirm.

Add a Smart gateway

Store Name : Store Code [2]:store1

Smart gateway ID: 5754000126

Cancel Confirm

Step 5: At this point, the process of creating stores and assigning gateways using the administrator account is complete. You can click "Sign out" in the upper right corner to log out of the administrator account, and re-login to the store account set when creating the store in Step 2.

Step 6: Enter the store, you need to check the "Gateway" - "list" page to check the gateway devices deployed and installed by the user, and check whether the received gateway is the same as the gateway displayed on the page.

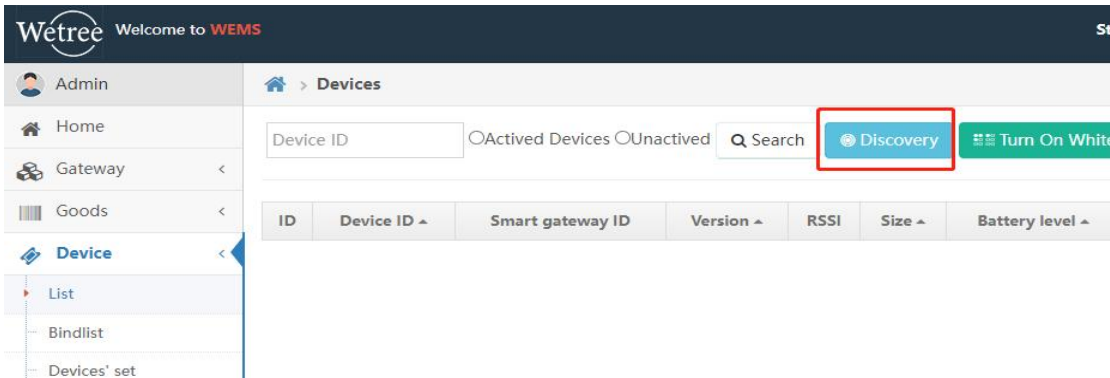
Wetree Welcome to WETree Store : store1 Enter Store management English Sign

Admin Home Gateway List Gateways' set Goods Device Template History

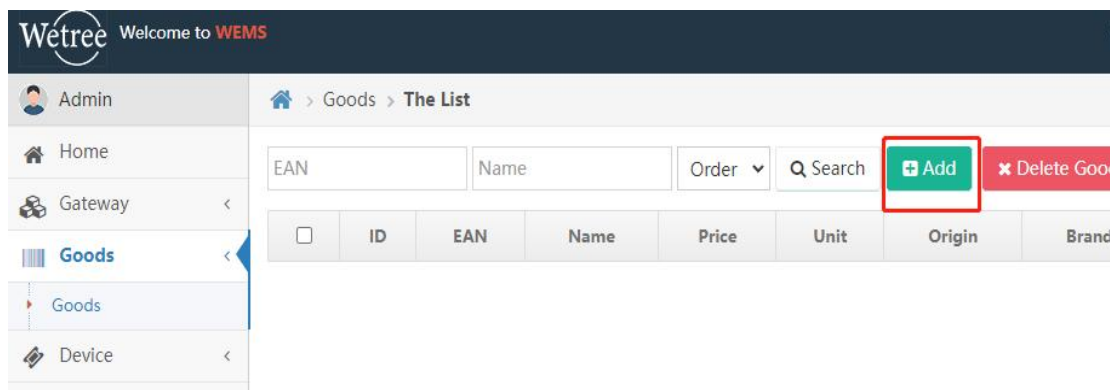
Smart gateway Smart gateways Edit Mark

ID	Smart gateway ID	MAC	Model	Version	Mark	Channel group	Time Zone	Online ?	Creation Date	The Heartbeat	Last Login IP
1	5754000126		W2G-01	2.10_2.6		-----	+8		2021-07-21 17:24:39	2022-04-26 17:43:30	192.168.0.12

Step 7: Go to the "Device" - "List" page and click the "Discovery" button to find the device, and check the ID, RSSI (signal), size, power and other information of the electronic price tag.

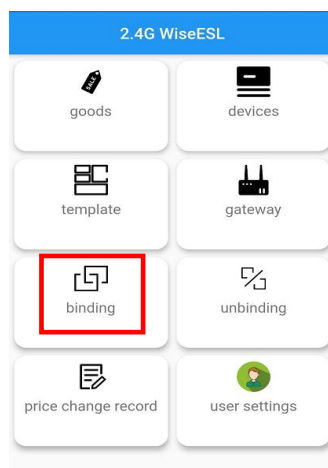


Step 8: Enter the "Goods" page and click the "Add" button to add product information (the product information marked with \* is required, and the product barcode must be a unique code)



Step 9: Use the mobile APP (WTE Link), click "Server Settings" to set the server address, (if the user's WEMS price tag management software is deployed in the local area network, the mobile phone needs to be connected to the wifi of the local area network, and the server address is set to the local area network IP) Use the store account to log in, (the account password is the store account set when creating the store in step 2).

Step 10: Click the "Bind" function to scan the price tag device ID and product barcode ID. After the binding is successful, the price tag device will refresh the default product screen.



## 2.2 WEMS module function introduction

This chapter will introduce the use of the functions of each module in the WEMS management background

### 2.2.1 "Home" module

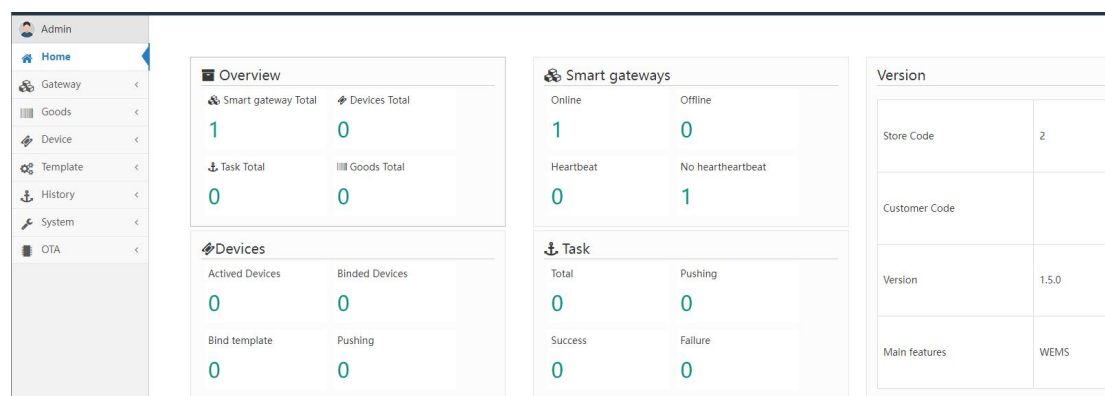
When you enter the homepage, you can see the related data of the gateway, price tag device, and task. In addition, you can also see the version information of the management system on the right side of the interface.

In this interface, when you click the device information, you can see the device list of the "Device" module;

When you click on the gateway information, you can see the gateway list of the "Gateway" module;

When you click on the task to refresh the data, you can see the task list of the "History" module.

This interface is equivalent to a shortcut key, which can quickly enter some functional areas in these three modules.



### 2.2.2 "Gateway" module

From this module, you can get information about all gateways in the store.

After selecting the gateway, click "Edit Mark" to edit the gateway information, such as remarking the gateway location, which is convenient for subsequent management.

Admin > Smart gateway > Smart gateways											
Edit Mark											
<input type="checkbox"/>	ID	Smart gateway ID	MAC	Model	Version	Mark	Channel group	Time Zone	Online ?	Creation Date	The Heartbe
<input type="checkbox"/>	1	5754000126		W2G-01	2.10_2.6	snack area	-----	+8	<input checked="" type="checkbox"/>	2021-07-21 18:09:03	2022-05-05

### 2.2.3 "Goods" module

This module is mainly used to manage products, it is divided into two parts: "Add new products" & "Product information". "Add Product" is used to add a single product, and you can only add one product one product at a time; "Product Information" is used to add products in batches. The specific operations are as follows:

#### Function A: Add a single item

When you add a new product, there are four required fields (EAN code, product name, product price). There is a red "\*" on the right side of the required field, which must be filled in and saved. It is optional without "\*".

The screenshot shows the 'Add Goods' form. The sidebar on the left contains the following links: Admin, Home, Gateway, Goods (selected), Device, Template, History, System, and OTA. The main form area contains the following fields:

- EAN \* (required), Name \* (required), Price \* (required), Promotion Price, VIP Price, Grand, and QRcode.
- Short Name, Origin, Unit, Promo Date, and VIP Date.

A 'Confirm' button is located at the bottom right of the form.

#### Function B: Import product information in batches

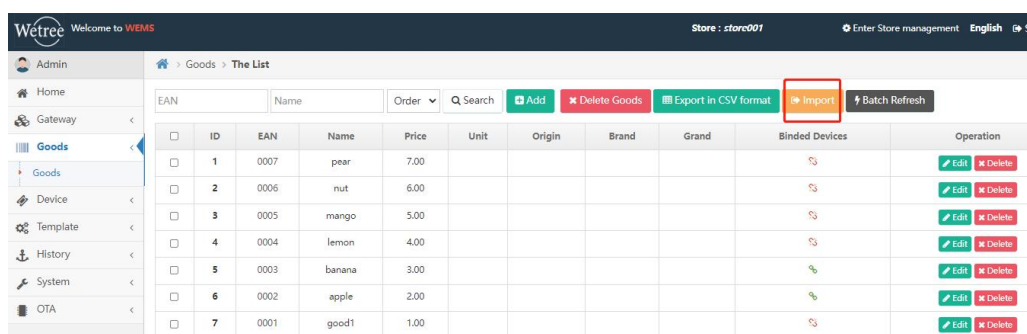
From this module, you can bulk import product information in CSV format.

Step 1: Click "Export as CSV"

The screenshot shows the 'Goods' module interface. The sidebar on the left contains the following links: Home, Gateway, Goods (selected), Device, Template, History, System, and OTA. The main form area contains a table with the following columns: ID, EAN, Name, Price, Unit, Origin, Brand, Grand, and Binded Devices. The table has one row with the following data: 1, 0001, good1, 1.00, , , , , . The 'Export in CSV format' button is highlighted with a red box.

Step 2: Export in CSV format and save it to the location you need. Then fill in the form with your product informatio

1	exportsta	item_name	pricel	item_shor
2	0001	good1	1	
3	0002	apple	2	
4	0003	banana	3	
5	0004	lemon	4	
6	0005	mango	5	
7	0006	nut	6	
8	0007	pear	7	
9				



Step 3: Click "Import" to import the CSV form filled with product information into WEMS

Function C: Edit product information

Click the "edit" button behind the product to change the product-related information, and check the three checkboxes in "Refresh Device", which correspond to the three update modes of "Real-time Update", "Promotion Update" and "VIP Update".

"Real-time update": The changed information will call the "Normal Template" to refresh the price tag display content in real time.

"Promotion Update": You need to fill in the promotion price, the start time and end time of the promotion, and check the "Promotion Update Check Box". After the promotion time arrives, the price tag will automatically use the "Promotion Template" to update the screen.

"VIP update": You need to fill in the VIP price, the start time and end time of the VIP, and check the "VIP update check box", after the VIP time arrives, the price tag will automatically use the "VIP template" to update the screen.

(For the three template settings, please refer to the introduction of the "Template" module)

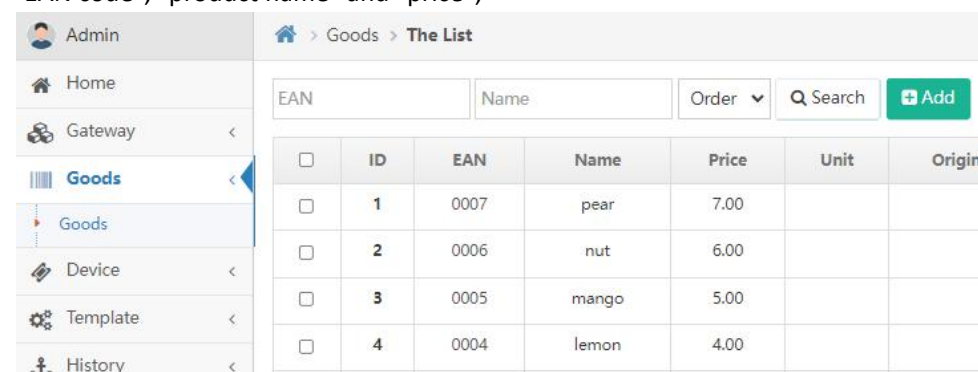
Form fields and options:

- EAN: 0001
- Name: good1
- Price: 1.00
- Promotion Price: 0.00
- VIP Price: 0.00
- Grand: Grand
- QRcode: QRcode
- Short Name: Short Name
- Origin: Origin
- Unit: Unit
- Promo Date: Start time, End time
- VIP Date: Start time, End time
- Brand: Brand
- Refresh Devices: ☒ Real-time refresh, ☐ Refresh Promo, ☐ Refresh VIP
- Confirm button

Function D: Item sorting and search

Users can search for products according to "EAN code" and "product name", which is convenient for users to operate;

Users can manage the display sorting of products according to the three sorting conditions of "EAN code", "product name" and "price";





## 2.2.4 "Device" module

This module is mainly used to manage ESL devices. It is divided into four parts: device list, device binding list, device settings, battery alarm.

### Function A: Device List

**Device Classification** This section shows the ID, version, signal, size, online status, etc. of the ESL device. As shown below.

Home

Gateway

Goods

Device

List

Bindlist

Devices' set

Battery Warning

Template

History

System

OTA

Device ID

Active Devices

Unactivated

Search

Discovery

Turn On White List

ID	Device ID	Smart gateway ID	Version	RSSI	Size	Battery level	Creation Date	Last Heartbeat Date	Status	Operation
1	db9ed9f9	5754000126	2.30	49	2.9"	2967	2022-04-29 11:11:52	2022-05-05 15:36:47	Activated Devices	Ping
2	160fc80a4	5754000126	2.30	47	2.9"	3110	2022-04-29 11:31:28	2022-05-05 15:36:46	Activated Devices	Ping
3	2a363d9e0b	5754000126	2.30	28	2.9"	3106	2022-04-29 11:41:29	2022-05-05 15:36:46	Activated Devices	Ping
4	40e42b6671	5754000126	2.30	47	2.9"	3095	2022-04-29 11:31:27	2022-05-05 15:36:46	Activated Devices	Ping
5	99b8a05e74	5754000126	2.30	45	2.9"	3076	2022-04-29 11:31:28	2022-05-05 15:36:46	Activated Devices	Ping
6	06808d5697	5754000126	2.30	46	2.9"	3091	2022-04-29 13:18:09	2022-05-05 15:36:45	Activated Devices	Ping
7	091bf1086	5754000126	2.30	46	2.9"	3078	2022-04-29 13:18:08	2022-05-05 15:36:45	Activated Devices	Ping
8	13a8e2d210	5754000126	2.30	55	2.9"	2962	2022-04-29 11:11:54	2022-05-05 15:36:45	Activated Devices	Ping
9	2ce4fc4e68	5754000126	2.30	45	2.9"	3055	2022-04-29 13:18:08	2022-05-05 15:36:45	Activated Devices	Ping

Users can turn on the "whitelist" function to filter the devices that they need to manage

### Function B: Device binding list

In this module, users can view the information about the products bound to the price tag and the information of the template, and can select the price tag through the multi-select box to configure the template for the price tag in batches (if no template is set, the system will use the default template)

ID	Device ID	Size
<input checked="" type="checkbox"/>	1	61d0f300c8
<input checked="" type="checkbox"/>	2	69237e2c96
<input checked="" type="checkbox"/>	3	4b9a837e40
<input type="checkbox"/>	4	d87d62493e

Template : 2.9\_Test1

Promo :

VIP :

Cancel Confirm

### Function C: battery alarm

This function page displays the device with low battery alarm, and the user can replace the device battery according to the alarm information.

## 2.2.5 "Template" module

The main function of this module is to create templates, edit templates, default template settings and other template-related operations

Before we want to send information to the ESL device, we need to design the template first. This module is where users can design and make templates. This module is divided into three parts: A. New template (used to design and make templates); C. Template list (display all templates made); C. Public templates (display the templates that come with the system);

### Function A: New template

When making, you need to choose the size of the template price tag, and then use the tools on the left to design and make the template. Tools include:

Text, rectangle border, square border, circle, ellipse, double line segment, single line segment, price template, barcode, QR code.

Click a tool icon with the mouse, and the corresponding tool icon will be displayed in the template area. On the right, you can set the background color, alignment, font color, and font size. Note that the Font Size tool only pops up when you double-click the selected text.

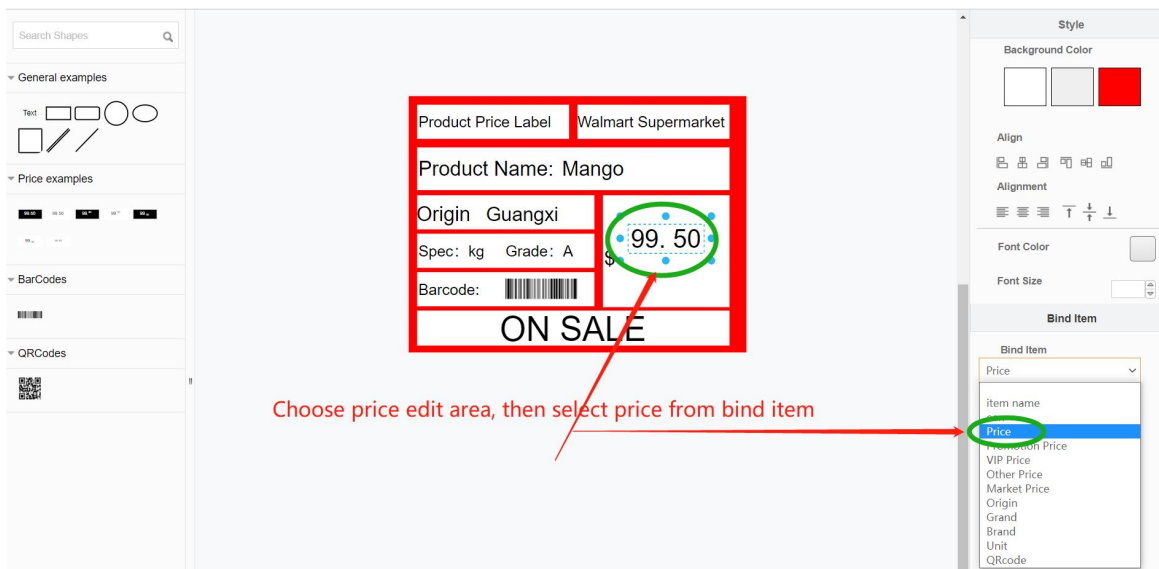
In addition, there is a "Bind Parameters" tool at the bottom right. Click here, the parameters will pop up, you can choose or not choose, if you choose a parameter, in the case of similar products, you only need to design a template, the binding content will change with the product.

For example, Dataimang and Qingmang are both fruits, and their parameters are the same. You have designed a price tag template of Dataimang as shown below. In the template of Dataimang, in this template, you put the specific product name. Bind the parameter "commodity name", bind the specific origin to the parameter "origin", bind the specific price to the parameter "commodity price", and save the template. Qingmang can use Dataimang's template price tag, so that you don't have to spend time designing Qingmang's template price tag. Then, according to the process of binding the template, the product of Qingmang is bound to the template price tag of Dataimang. After sending to the ESL device, the template displayed on the device is the information of Qingmang.

The function of binding parameters is applicable to similar products with the same parameters.

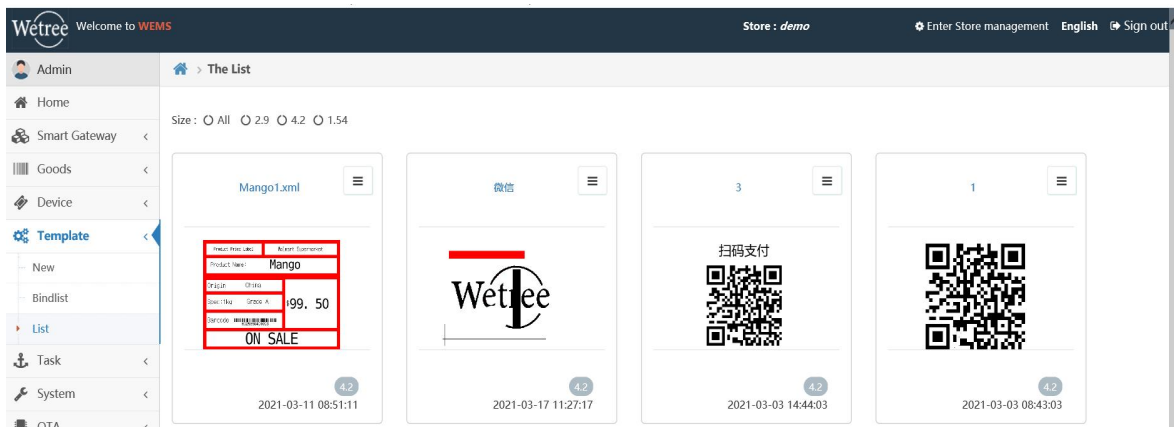
<input type="checkbox"/>	ID	EAN	SKU	Name	Price	Unit	Origin
<input type="checkbox"/>	1	1234565	W123005	Blueberry	12.80	kg	Shanghai
<input type="checkbox"/>	2	1234564	W123004	Coconut	13.80	kg	Hainan
<input type="checkbox"/>	3	1234563	W123003	Mango	6.98	kg	Guangxi
<input type="checkbox"/>	4	1234562	W123002	Lichee	12.98	kg	Taiwan
<input type="checkbox"/>	5	1234561	W123001	Lemon	6.98	kg	China

choose the product edit text area, then select item name



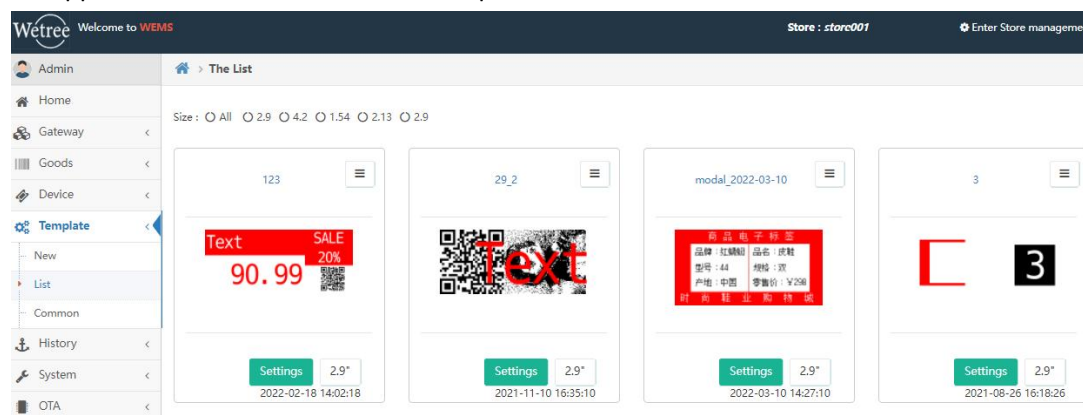
## Section B: Template List

The template list stores a record of templates you have created. You can click to view it, or you can make modifications on the basis of the templatechange.



## Function C: public template

The public templates store the templates that come with the system, which is convenient for users to use quickly. The user can click to enter the editing mode and click the "Save" button in the upper left corner to view it in the template list



## 2.2.6 "History" module

This module is used to view the published tasks, which are divided into two viewing modes

## Function A: Change price record

This module records the last price change record of the price tag device according to the price tag device ID. The same price tag device will only display the last price change record.

ID	Devices ^	EAN	Name	Category	Creation Date ^	End time	Total	Result
1	a7f82baf5f	0003	banana	Real-time refresh	2022-05-12 15:36:20	2022-05-12 15:35:44	0	Success
2	7b52fe3959	0003	banana	Real-time refresh	2022-05-12 15:36:11	2022-05-12 15:35:35	0	Success
3	e325c6b836	0003	banana	Real-time refresh	2022-05-12 15:36:00	2022-05-12 15:35:27	0	Success
4	830173bbbd	0003	banana	Real-time refresh	2022-05-12 15:35:51	2022-05-12 15:35:14	0	Success
5	ec8fa4083e	0003	banana	Real-time refresh	2022-05-12 15:35:38	2022-05-12 15:35:04	0	Success
6	6b0851904e	0003	banana	Real-time refresh	2022-05-12 15:31:09	2022-05-12 15:30:37	0	Success
7	95891dc24d	0002	apple	Real-time refresh	2022-05-12 15:28:51	2022-05-12 15:28:24	0	Success

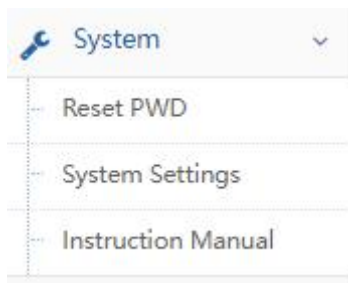
## Function B: price change history

This module records all price change records, and users can filter by three conditions (device ID, creation time, refresh result) to understand the refresh status of the device.

ID	Devices ^	Category	Creation Date ^	End time ^	Total	Result
1	6b0851904e	Real-time refresh	2022-05-12 15:29:26	2022-05-12 15:28:50	0	Success
2	6b0851904e	Real-time refresh	2022-05-12 15:28:28	2022-05-12 15:28:24	0	Success
3	f78f2df5c4	Real-time refresh	2022-05-10 17:18:16	-----	0	In the queue
4	f78f2df5c4	Real-time refresh	2022-05-10 17:16:35	2022-05-10 17:16:04	0	Success
5	f78f2df5c4	Real-time refresh	2022-05-10 17:15:50	2022-05-10 17:15:23	0	Success
6	f78f2df5c4	Real-time refresh	2022-05-09 13:41:53	2022-05-09 13:41:25	0	Success
7	f78f2df5c4	Real-time refresh	2022-05-07 16:53:13	2022-05-07 16:52:54	0	Success

## 2.2.7 "System" module

This module can set the account password of the management system, and download the instruction manual



## 2.2.8 "OTA" module

This module is used to manage OTA and software upgrades, including gateway upgrade, device upgrade, gateway upgrade record viewing, and device upgrade record viewing.

### Section A: Gateway Upgrade

When the gateway has a new upgrade task, there will be a red "New" display on the right side of the gateway OTA.

Click "Gateway OTA" → click "Upgrade" → select the gateway that needs to be updated → confirm

### Section B: Equipment Upgrades

When there is a new upgrade task, there will be a red "New" display on the right side of the device OTA.

Steps: Click the device OTA → click "Upgrade" → select the device of the corresponding model → confirm.

Steps: Click the device OTA → click "Upgrade" → select the device of the corresponding model → confirm.

### Section C: Gateway Upgrade Tasks

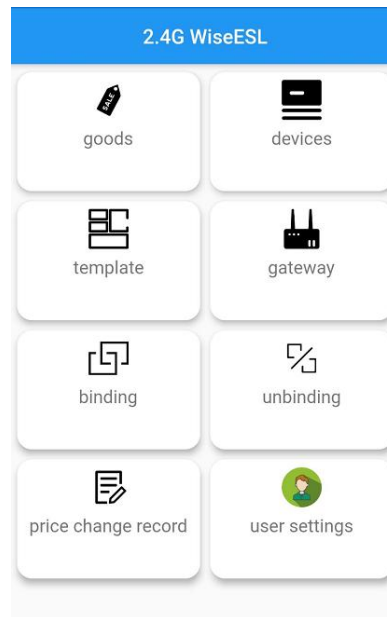
After the gateway upgrade task is issued, you can view the status of the gateway upgrade (success or failure) here. This area shows records of all issued upgrade tasks.

### Section D: Equipment Upgrade Tasks


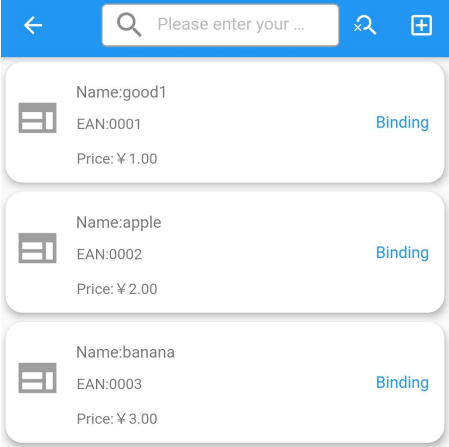


After the device upgrade task is issued, you can view the device upgrade status (success or failure) here. This area shows records of all issued upgrade tasks.


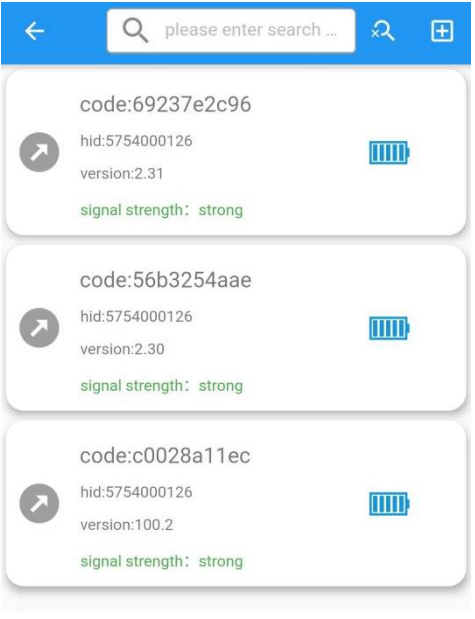


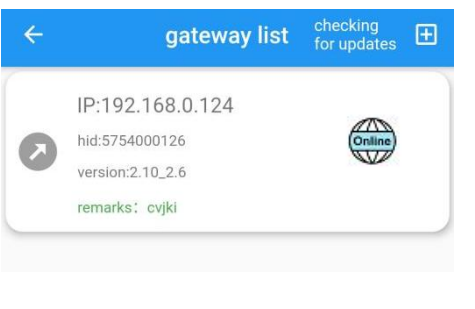
### 3、WTE Link App


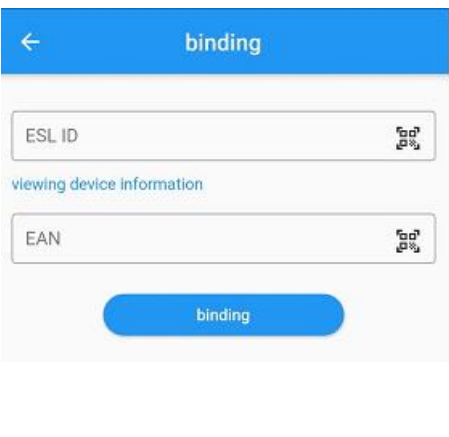

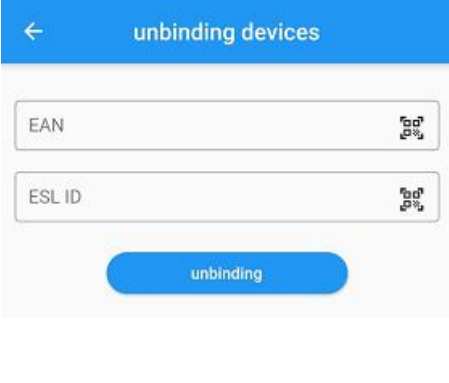

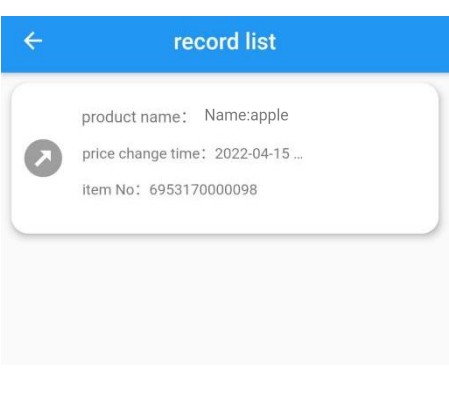

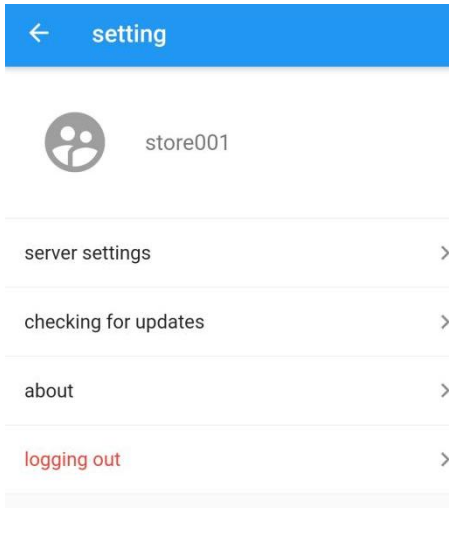
Mobile APP WTE Link is the only tool to bind & unbind products and devices. The following introduces several functional modules and operation methods of the APP. (Note: "WTE Link" APP can be downloaded from the E series data list in the download area of Rongya's official website <https://www.witstec.com/download-2/>)



#### 3.1 Detailed introduction of WTE Link function module

Function icon	Edit interface	Features
 goods		<p>This function is used to add product information and change product information</p>  <p>Click the button in the upper right corner to enter the add product interface, enter the required items "EAN", "product name", "price", and then the interface will drop down to the bottom and click "OK to add" to add product information.</p>  <p>The "EAN" code can be obtained by clicking on the camera to scan the actual product barcode.</p>

 <b>devices</b>		<p>This function is used to view device-related information, such as device ID, device model, gateway ID, device version, battery level information, etc.</p>
 <b>template</b>		<p>This function is used to set the device template.</p>
 <b>gateway</b>		<p>This function is used to view gateway-related information and set remarks</p>

 binding	 <p>The mockup shows a 'binding' screen with a blue header. It contains two input fields: 'ESL ID' and 'EAN', each with a barcode scanner icon to its right. Below the 'EAN' field is a blue button labeled 'binding'. A link 'viewing device information' is located between the two input fields.</p>	<p>This function is used to bind the product and the price tag. Scan or enter the device ID, then scan or enter the product barcode, and click binding to bind the device and the product.</p>
 unbinding	 <p>The mockup shows an 'unbinding devices' screen with a blue header. It contains two input fields: 'EAN' and 'ESL ID', each with a barcode scanner icon to its right. Below the 'ESL ID' field is a blue button labeled 'unbinding'.</p>	<p>This function is used to unbind devices and products Scan or enter the product barcode, then scan or enter the device ID and click unbinding to unbind the device and the product</p>
 price change record	 <p>The mockup shows a 'record list' screen with a blue header. It displays a list item with a circular arrow icon on the left and the following text: 'product name: Name:apple', 'price change time: 2022-04-15 ...', and 'item No: 6953170000098'.</p>	<p>This function is used to view commodity price change records</p>
 user settings	 <p>The mockup shows a 'setting' screen with a blue header. It features a user profile icon and the text 'store001'. Below this are four menu items, each with a right-pointing chevron: 'server settings', 'checking for updates', 'about', and 'logging out' (which is highlighted in red).</p>	<p>This function is used to set the connection server, view the version information of the APP, and update the version prompt, etc.</p>



### 3.2 How to use WTE Link to modify the price tag screen

Log in to the store account

Use the "Binding" function to bind the device to the product


Use the "Goods" function to find the product, modify the product price, name, etc., click "Confirm Modification", and the price tag screen will be changed according to the template and product information.

## 4. ESL electronic price tag equipment

The electronic price tag device is the main body of the price tag information display. After the price tag template is made in the WEMS management system, it is sent to the Internet off, and then the gateway transmits it to the ESL device.

### 4.1 Specifications and pictures of ESL equipment

At present, the size of our electronic price tag device is 2.9", and the specific specifications are as follows

Size	2.9"
Product photo	
Screen Type	E-ink screen
Display color	Red,white,Black
Display Resolution(pixel)	296*128
Display size{mm}	66.9(W)*29.06(L)
Device Outline dimension[mm]	90.5(W)*44.1(L)*11.5(H)
Dpi	112
working temperature	0-40℃
Communication	2.4G FSK
Material	ABS
indicator LED	Blue,Red

## 4.2 Installation of ESL electronic price tag battery

E-series product electronic price tag equipment needs to be equipped with batteries. If the user can't see the device in the device list, he needs to click the "Discovery" function to open the device search. (Refer to the quick use of the electronic price tag system version of E series products - step 7)

## 4.3 Features of ESL Electronic Price Label

ESL has the following characteristics:

- a. Wireless communication (the gateway transmits to the ESL device using 2.4G wireless communication technology)
- b. Ultra-low power consumption
- c. Non-reflective
- d. Fast update

## 4.4 Advantages of ESL Electronic Price Labels

ESL management system reduces labor management costs, improves price accuracy and price dynamics. The concept of dynamic price is that merchants can mobilize prices at any time to meet demand, such as: online competition, creating promotions.

The advantages of using electronic price tags in supermarkets are as follows:

### A. The price is more accurate and the labor cost is saved

Electronic price tags are easier to edit and more accurate. In addition, it greatly saves the time for employees to change price tags, and ultimately saves labor costs

Book. Employees don't need to waste their time doing hundreds of thousands of replacement price tags because of small price changes.

Tedious work inevitably leads to mistakes on the price tag. Many retailers give customers the displayed price of the item instead of

The actual price of the item, so a small mistake ends up costing the merchant a huge amount.

Electronic price tags can avoid this problem

It will not manually change the price because of a small change in the price of the commodity, so as to avoid the above similar things from happening again. you

Staff time is spent better serving customers instead of spending a lot of time changing price tags.

### B. Greener

With traditional paper price tags, every time the price changes, you need to print a new label, resulting in a lot of waste. this wave

The fee situation is especially noticeable for retailers who sell hundreds or thousands of different products, with repeated paper changes.

Labels create expensive label costs and increase waste. The use of electronic labels means that you only need to buy the label once and do not

Waste any resources and the price can be updated from time to time.

C. Show more product information

With the electronic price tag, more product information can be displayed on the price tag. This means that you can show a lot of other information instead of just is the price. For example, you can use the electronic price tag to display any of the following information:

- a. Additional Product Information
- b. Nutrients
- c. Dimensions
- d. Price/Weight
- e. Inventory

## 4.5 Application of ESL Electronic Price Label

Based on the features and advantages of ESL mentioned above, ESL is a very good choice for supermarkets, grocery stores, electronics stores, and pharmacies.

