

## ELECTRONIC SHELF LABEL SYSTEM(ESL)

### ESL电子货架管理系统产品手册

**EASTSUN** 珠海东之旭科技有限公司  
Zhuhai Eastsun Technology Co., Ltd

## About Us

Zhuhai EastSun Co., Ltd. was established in 2012, is mainly engaged in radio frequency identification (RFID) hardware and services to develop customized products and industry application solutions.

EastSun's main products include RFID tags, electronic price label (ESL), realized for the retail, logistics, warehousing and other industry application solutions. Products are sold to Europe, America and Southeast Asia, to establish a close long-term partnership of deep industry recognition and support customers over the years established a good reputation and brand image.

EastSun has experienced R & D team, first-class sales force and perfect service system, with a strong product development capabilities and market coverage to become the leader in radio frequency identification industry.

## Needs analysis

### ESL electronic price tag system

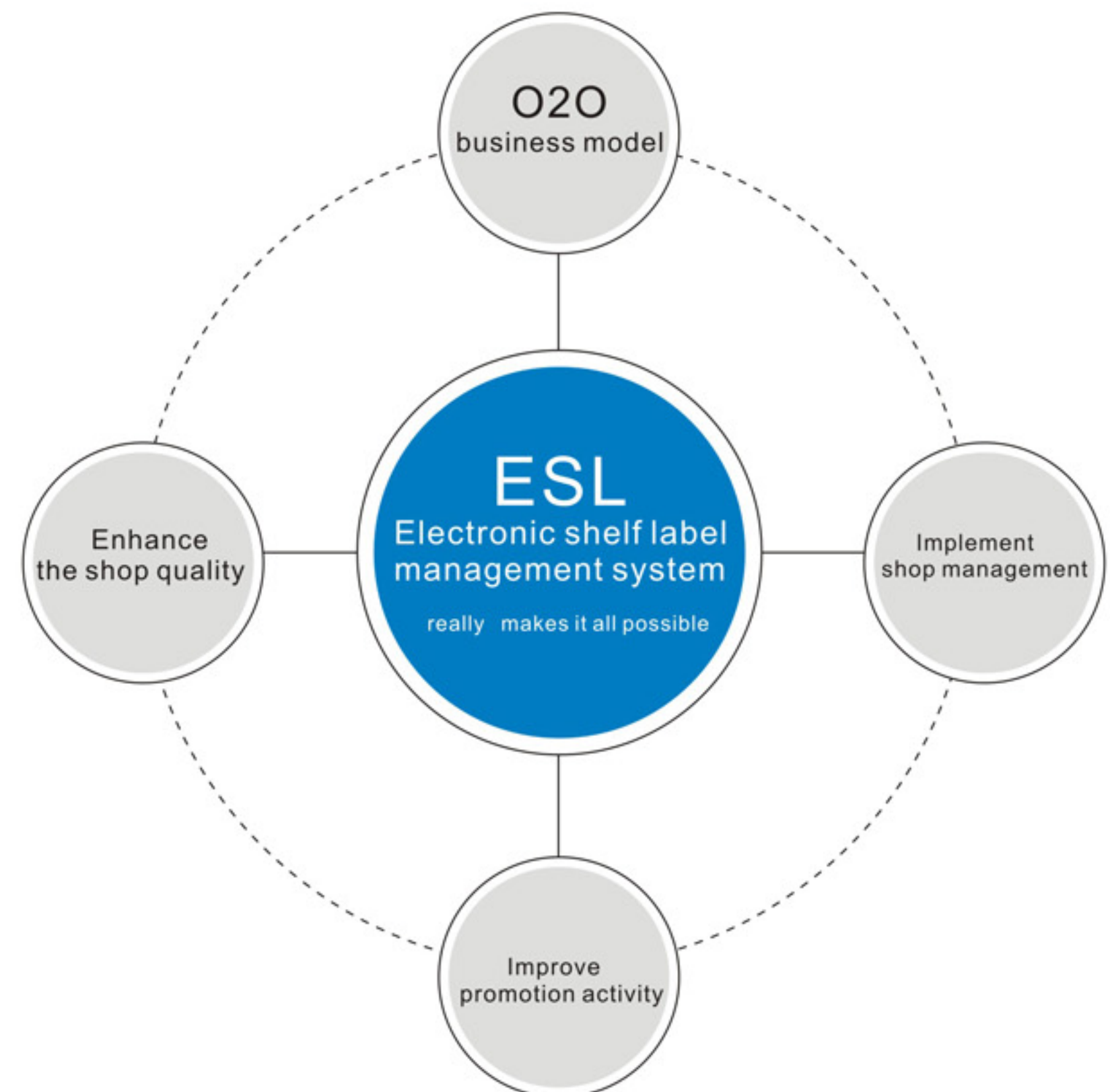
#### Help worldwide retail meet future business challenges

With the rapid development of electronic business, the store operations have been a huge impact:

- Franchise store price confusion
- Promotional activities implementation period is too long and activity low
- High operating costs
- Products' info simplistic
- Serious backlog of inventory

O2O focus on building the business model to enhance the shop quality and implement more sophisticated shop management, improve business promotion activity.

EastSun (ESL) Electronic shelf label management system really makes it all possible





# What is Electronic Shelf Label?

Electronic shelf label system is a kind of display system which can replace the traditional paper label on the shelf. Get rid of the current situation of manually changing the price tag, and realize the price consistency between the cash register and the commodity price. Widely used in supermarkets, high-end stores, cake shops, warehousing and logistics system.



## Traditional paper label VS Electronic Shelf Label

Replace the new label time-consuming, inefficient	price updates timely, flexible and accurate
Label loss is large	more than 5 years long service life
Manual replacement error rate up to 6%	0% error rate
Label loss rate of 2%	environmental protection, zero loss rate
Replacement is not timely or error cause commodity prices inconsistent with the back-end database	Seamless connection with POS system
Update the tag omission	Computer operation, change at any time
Replacement tag with high labor cost	Zero cost, instant bulk price change





# Application of electronic shelf labels





# Electronic shelf label system architecture

## What include in Electronic price tag system ?

The system comprising: server、 switches、 base stations、 tag、 scanner、 software.

### Tag:

supermarket business according to actual condition selected different sizes of the electronic shelf label.

### Base station:

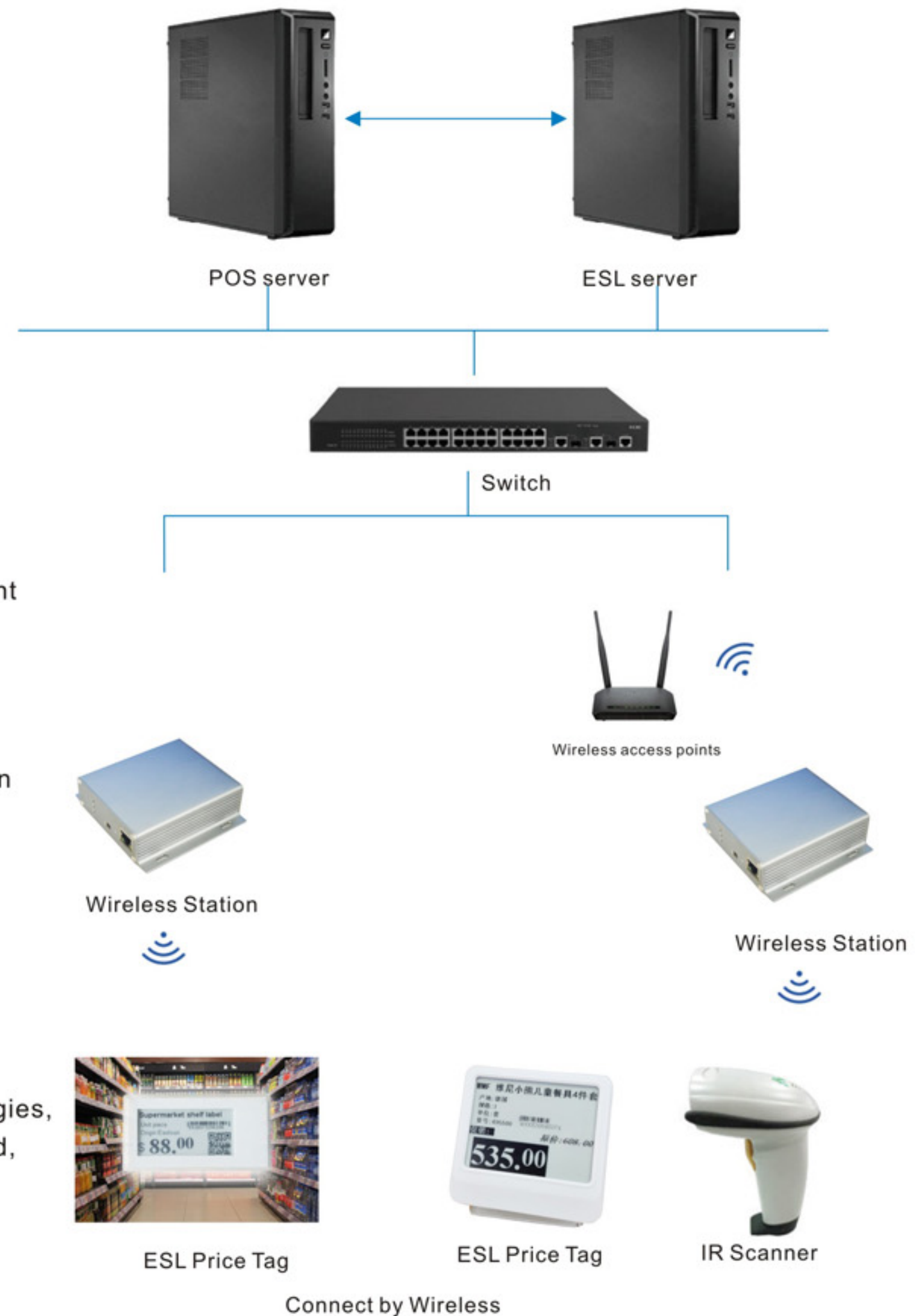
the entire system running transport hub, the use of independent communication protocols and network technology; hardware encryption and data compression technology to achieve rapid, low cost, efficient system operation.

### Software:

automated software management system

### Scanner:

The independent communication protocols and networking technologies, hardware encryption and data compression technology to achieve rapid, low cost, efficient system operation





# Electronic shelf label terminal display

## Label display properties

- Screen: electronic ink screen, electronic paper screen
- Display Format: dot matrix pixel display
- Viewing angle: 175
- Contrast: 7: 1
- Operating frequency: 433MHz / 868MHz / 915MHz
- Communication parameters: 30M
- Working life: more than 5 years
- Low power consumption: power protection, static working zero power
- Display capabilities: support for multiple languages, bar codes, 2D codes
- Operating temperature: 0-50
- Storage temperature: -20-70
- Outdoor display capabilities: Sunlight Readable

### • E-E21 Screen parameter

Effective display region:	48x23mm
Resolution:	212x104pixels
Physical dimension:	75x40x16mm
Battery:	CR2450*2
Weight:	40g
Applicable scene:	Shelves、hooks



E-E21

### • E-E42 Screen parameter

Effective display region:	84x62mm
Resolution:	400x300pixels
Physical dimension:	150x120x20mm
Battery:	CR3020*3
Weight:	90g
Applicable scene:	Shelves、hooks



E-E42

### • E-E29 Screen parameter

Effective display region:	66x29mm
Resolution:	296x128pixels
Physical dimension:	103x47x16mm
Battery:	CR2450*2
Weight:	60g
Applicable scene:	Shelves、hooks



E-E29

### • E-E71 Screen parameter

Effective display region:	165x65mm
Resolution:	800x600pixels
Physical dimension:	200x185x20mm
Battery:	CR3020*3
Weight:	260g
Applicable scene:	vegetables、fresh、promotion



E-E71 (Customized)



# Wireless emission layer base station & scanner

## 1、base station

Important information hub for connecting to the server and the electronic shelf label terminal, the base station receives the refresh command and data sent by the server through a network cable, wirelessly transmit the information to the label, the label achieved Data Update.



- Fast response, stable, reliable, low-power, anti-interference, wide coverage
- Internationally accepted protocol, covering the world's major countries and regions

Basic parameters	data verification
Product model:	E-S01
Physical dimension:	105x98x28mm
Working frequency:	433MHZ/868MHZ/915MHZ
Communication parameters:	R=30M
Internet connection:	Ethernet 10M/100M
Charging power supply:	5V DC/1A
Weight:	168g
Operating temperature	0°C-50°C
Storage temperature:	-20°C-70°C

## 2、Wireless Scanner

Scanner is indispensable accessory in the whole electronic shelf label system, by scanning the commodity barcode to bound the commodity and label, send the data to the server, to facilitate the updating of information goods.

Basic parameters	data verification
Product model:	E-A01
Physical dimension:	155x80x55mm
Decoding capability:	UPC/EAN、Code128、Code39、Code39Full ASCII、Codabar、industrial Code93、MSI、Code11、ISBN、Chinapost、etc
Working frequency:	433MHZ/868MHZ/915MHZ
Communication parameters:	30M
Battery capacity:	1000mA
Charging power supply:	5V DC/1A
Weight:	132g
Operating temperature	0°C-50°C

- Sleep and wake-up label
- Fool-operation, for frontline staff quickly master
- Charging time can be used 30 days





# System docking layer Management System

## System management software

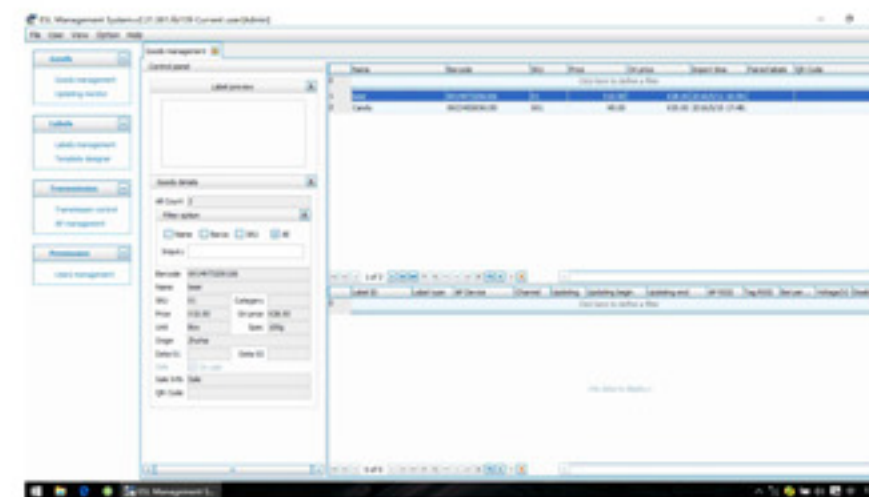
Based on the C / S structure of the electronic shelf label management system installed on the computer server for managing label and the base station. Can be realized on the base station and multi-label rights management mode, the system supports both LAN and WAN mode. Supports single-store management, but also realize the unified management of multiple stores.

## ESL Control System

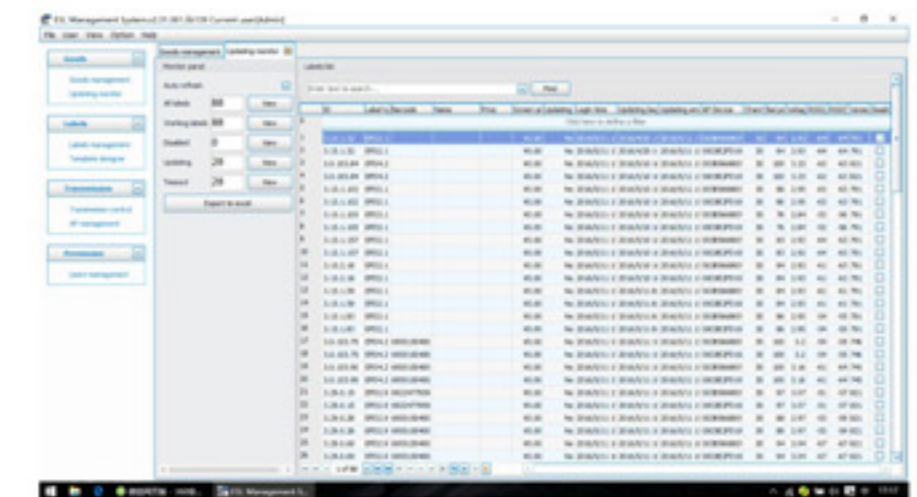
User

Password

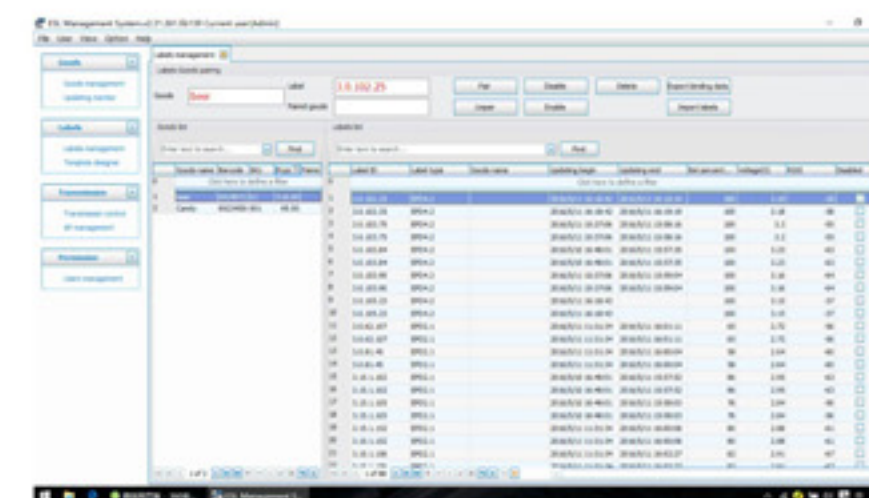
### 2、Goods management



### 3、Updating monitor



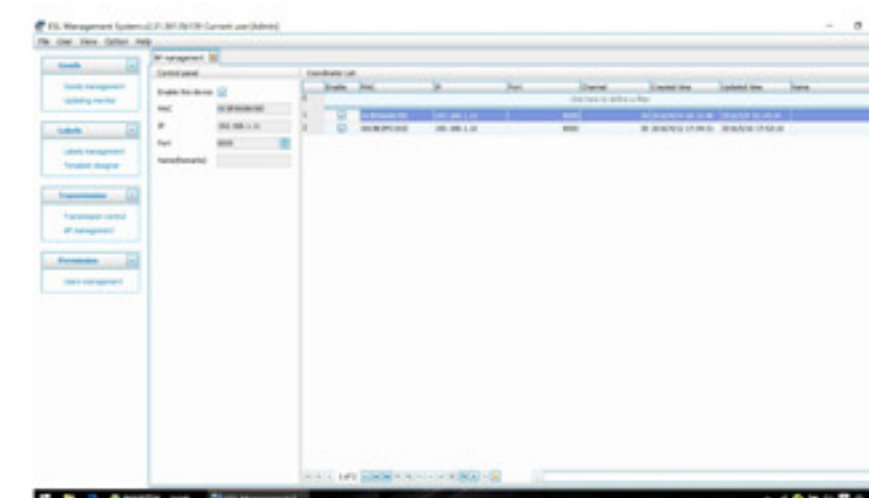
### 4、Labels management



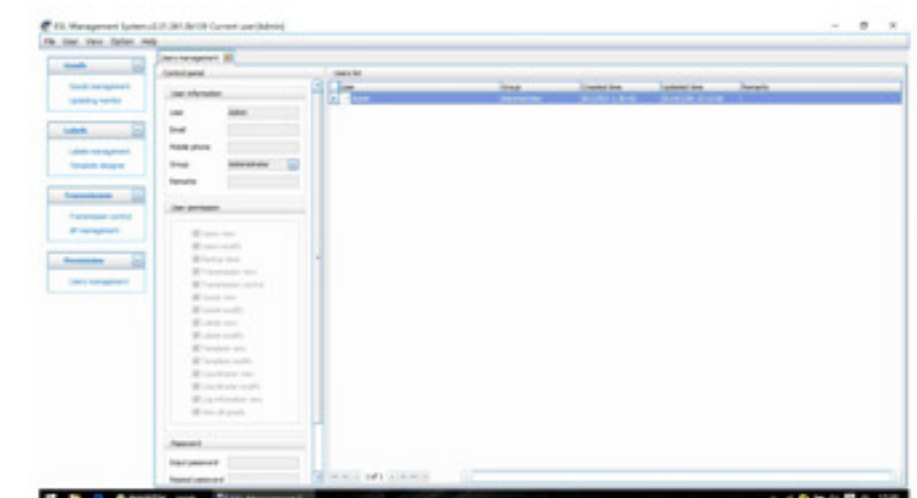
### 5、Template designer



### 6、AP management



### 7、Users management





# Electronic shelf label Application Operation diagram

1、Entry the product information into the database server



2、Binding the product barcode and the label by wireless scanning gun to achieve a unique identity



3、The radio base station receiving server command, send the information to the label by radio frequency



4、After accepting the instructions, update process execution





# Electronic shelf label Label Installation

1、Rail: Suitable for shelf display, desktop display



2、Suspended: suitable for hanging shelves, hook-style display



3、The independent rack: Suitable for electronics, electrical appliances, fresh area, fruit and vegetable area, cake display area





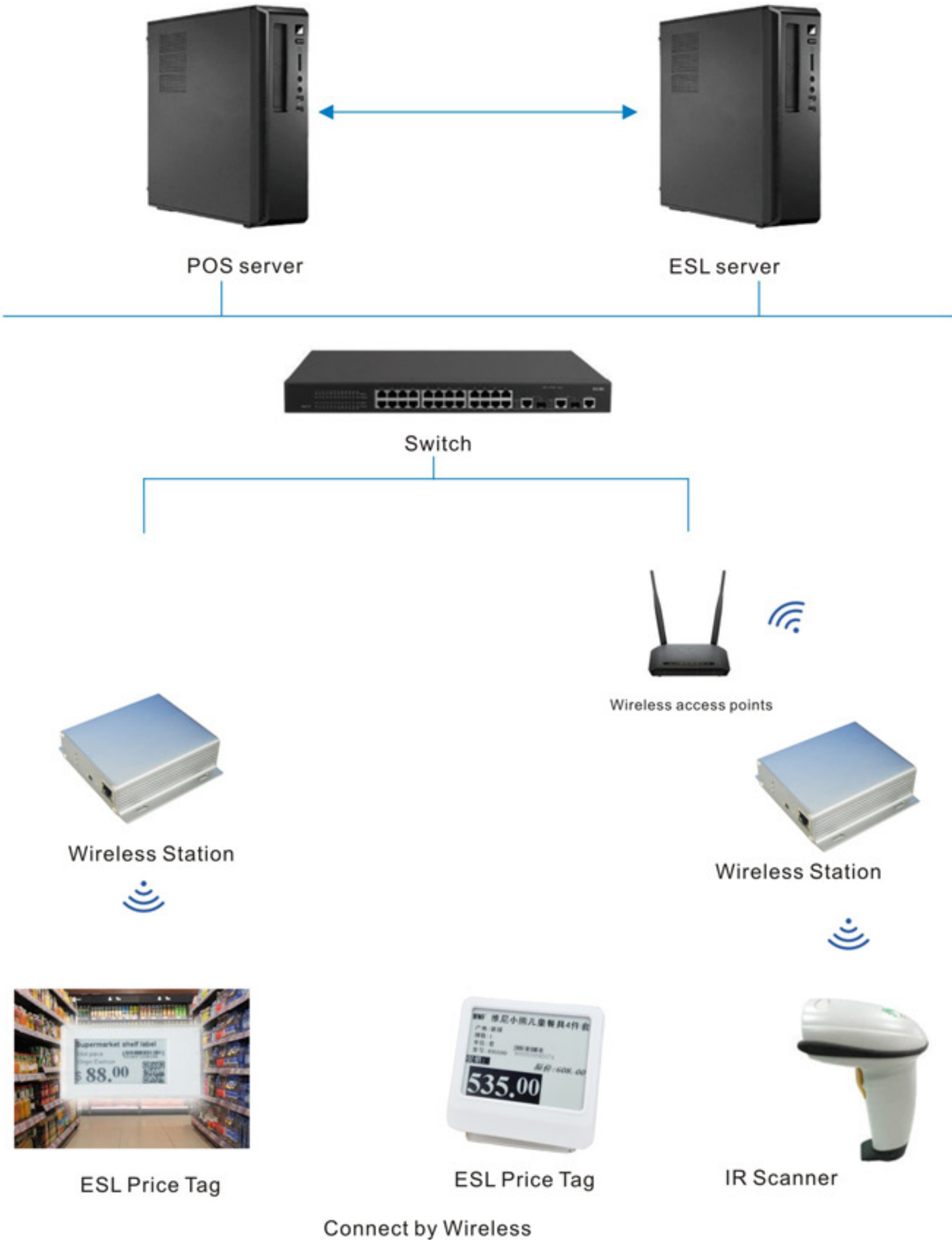
# Electronic shelf label Network Management Model

## 1、Intranet mode:

Intranet single store management system for independent management of supermarkets

### Store business model

Store mode	Electronic Shelf Label	Station	IR Scanner	Software	Server
Single-store	User selectable	One station can control 2,000 pcs price tag within 1,000 square meters	1 set	1 set	
Chain headquarters controlled	User selectable	One station can control 2,000 pcs price tag within 1,000 square meters	At least 1 set	1 set/store	1 set/store





# Electronic shelf label practical cases

## Case I Patisserie



## Case II Supermarket





Case III  
Infants and Children  
stores

Case IV  
upscale boutiques





## Our advantage

- **433 communication protocol**

strong transmission distance, strong anti-interference ability, to adapt to the complex environment

- **Simplified hardware compression**

low power consumption  
long battery life, speed, no communication error

- **Plug and play**

installation and operation is very simple,  
saving labor costs

- **Independent core chip**

highly integrated, system is powerful and stable,  
hardware is greatly simplified, the chip cost can be reduced by more than 50%, supply stable

- **Hardware ADHOC networks**

all hardware wireless ADHOC network, communication is stable and reliable, to ensure no error by a single data line can be completed docking with POS system, the stable operation of the system, no need to set up WiFi network, avoid data transmission because of unstable signal error

- **Patent wireless scanning gun**

alternative to the traditional PDA, the operation is more stable and reliable; greatly reduce the cost, simply by scanning to create a clear record, without typing, labels and commercial bar code easy to bind





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