

2.4GHz Electronic Shelf Label

Solutions

Zhuhai SUNY Technology Co.,Ltd

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1. ESL Solution Background

With labor costs increasing year by year and competitive pressure on commodity prices, the profits of retail supermarkets have been greatly affected. Meanwhile, talent shortage, high customer demand for store service levels and untimely updating of product price tags are problems that lead to customer complaints and compensation is not uncommon in the traditional retail industry.

Therefore, Europe, the highest labor cost countries take the lead in introducing the electronic shelf label product. With the combination of online and offline O2O mode gradually improved, the demand for electronic shelf labels is doubled year by year.

With the development of automation management, the intelligent retail management mode will gradually replace the traditional retail mode and take the dominant position.



Zhsunyco® introduces a variety of communication technology electronic label solutions to better meet the needs of different customers, help the popularization of digital displays, and contribute to the realization of global carbon peaking and carbon neutrality.

Cloud-based multi-store management

Applications:

Supermarkets, shopping malls,
chain stores, etc.



2.4GHz & 433MHz ESL

WIFI ESL

Direct WIFI Connection - Digital Display

Applications:

Office, classroom, libraries,
restaurants, etc.



NFC & BLE ESL

Mobile Phone - Digital Display

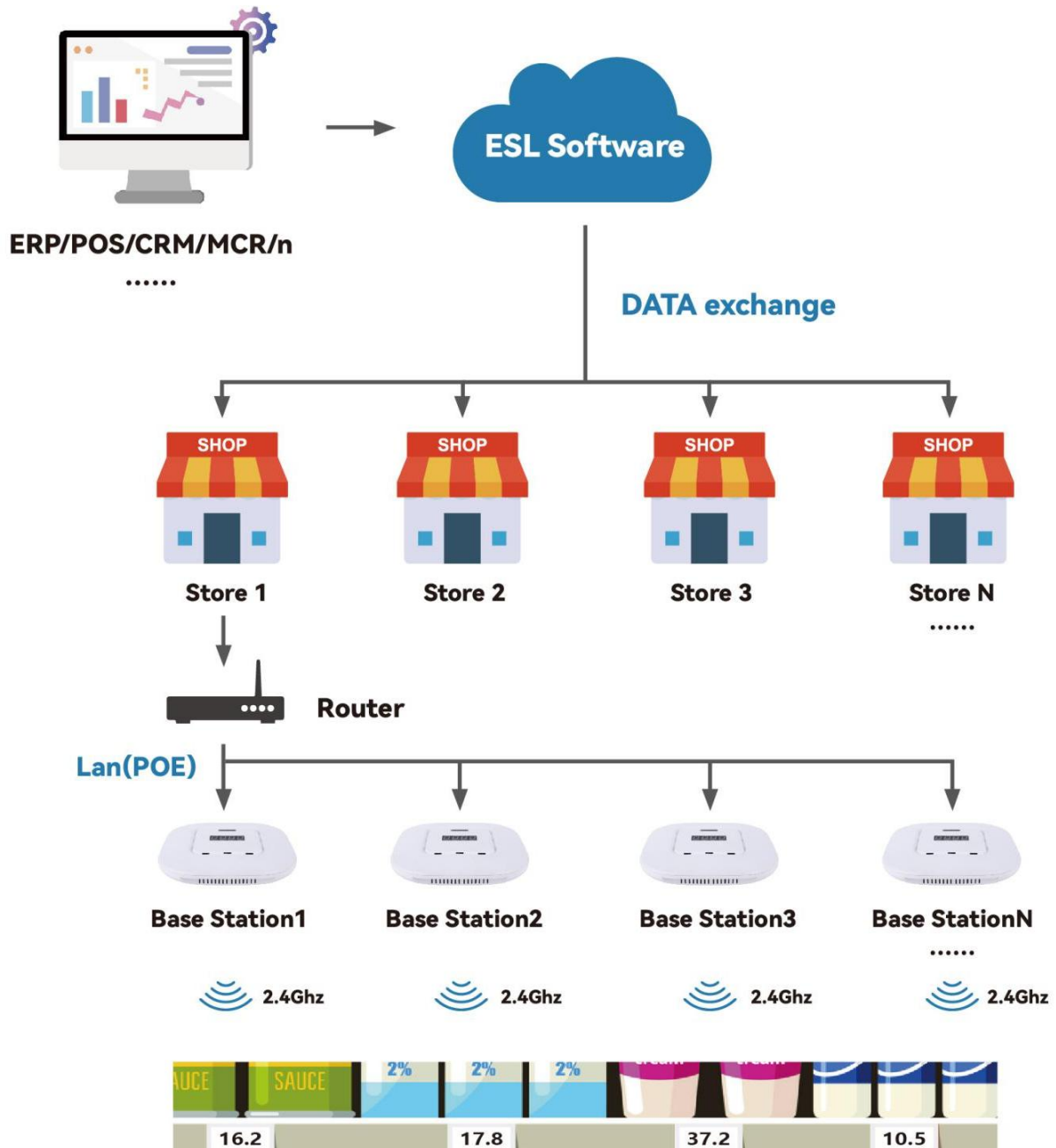
Applications:

Small retail stores, clothing
stores, gift stores, DIY stores,
restaurants, etc.



2. 2.4GHz Electronic Shelf Label solution

Zhsunyco® 2.4GHz Electronic Shelf Label solution consists of three components, including an Electronic Shelf Label management system (ESL Software), a wireless Base Station/AP and an Electronic Shelf Label.



Integrate the Electronic Shelf Label management system with the POS system/ERP system/CRM system/MCR system of the supermarket, the information of the customer database is sent to the Electronic Shelf Label management system, the Electronic Shelf Label management system will send the information to the wireless base station through LAN and the wireless base station will send the content to be displayed to the Electronic Shelf Label through the 2.4GHz communication frequency to realize the commodity information in real time update.

ESL Solution Benefits



Real-time update



Cut Costs



Reduce Waste



High Energy Efficiency



Online Shops



Low Error

- Wireless RFID technology for real-time updating of bulk price tags.
- Reducing labor costs and achieving profit growth in supermarkets.
- Reducing paper waste and protecting the environment.
- Improving operational efficiency and saving time costs.
- Online and offline, timely synchronization of product information across multiple stores.
- Reducing error rates, customer complaints and merchant compensation.

2.1. Software Introduction

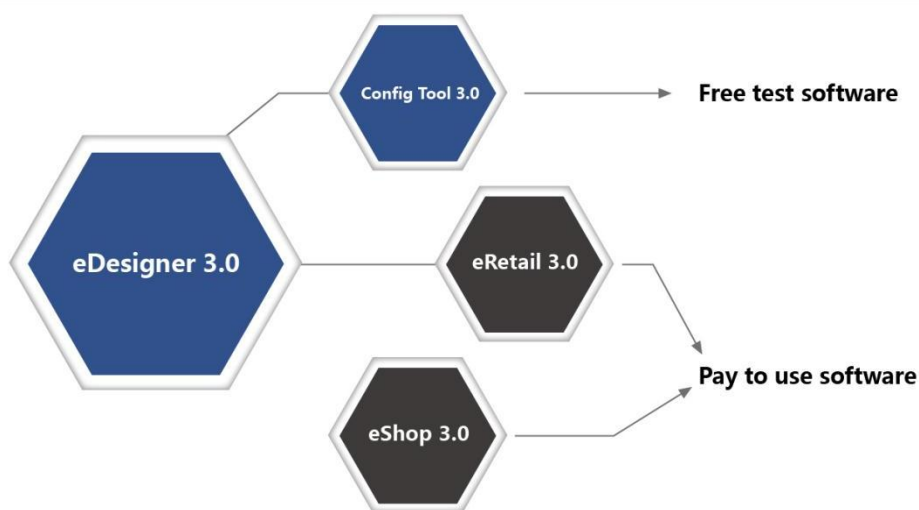
2.1.1. Product Matrix

Free test software

- eDesigner 3.0 (For eRetail 3.0)
- Config Tool 3.0 (For Base Station)

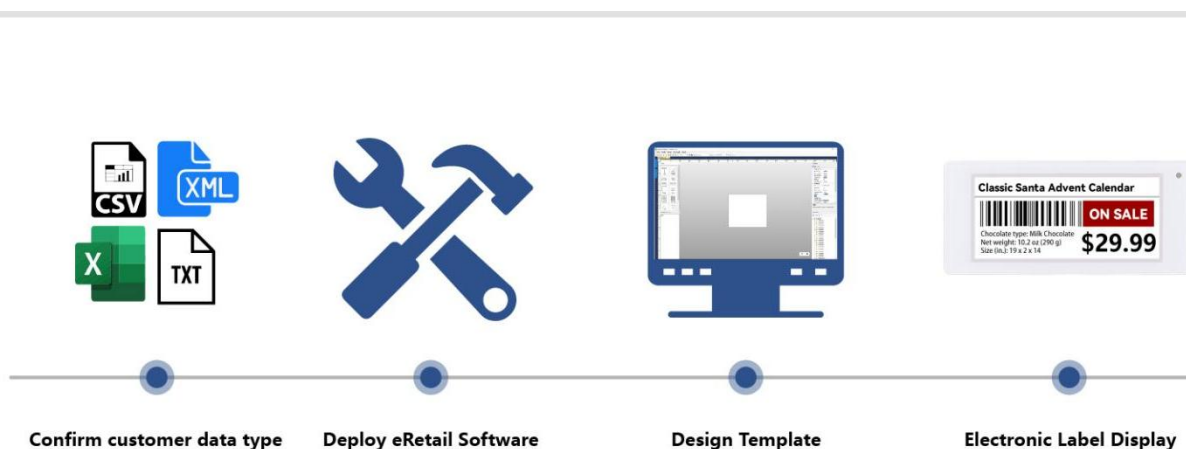
Pay to use software

- eRetail 3.0 (For multiple stores)
- eShop 3.0 (For single store)



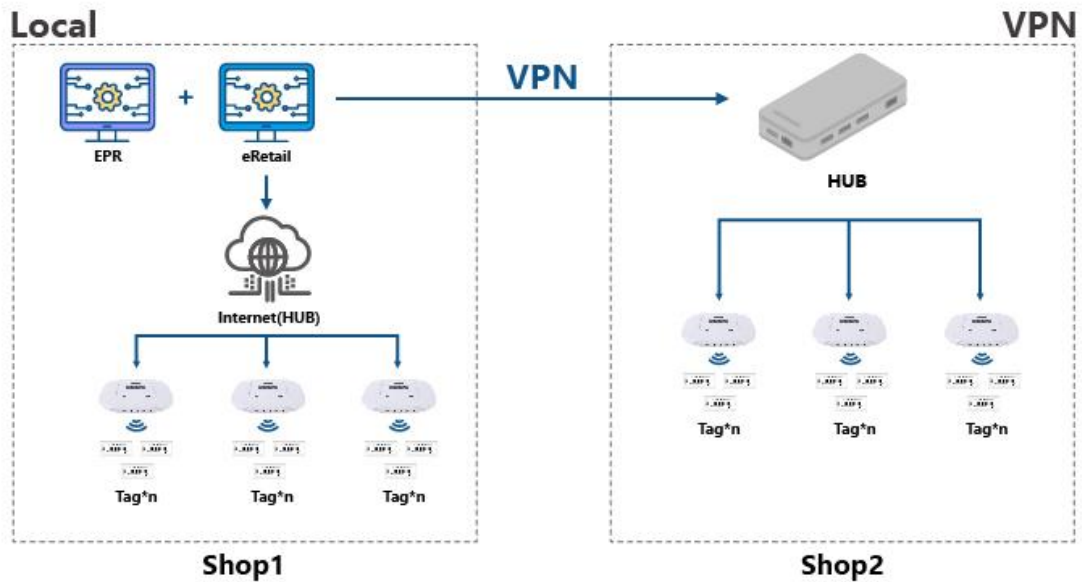
2.1.2. Steps to Deploy eRetail 3.0

Confirm customer data type → Deploy eRetail Software → Design Template → Electronic Label Display

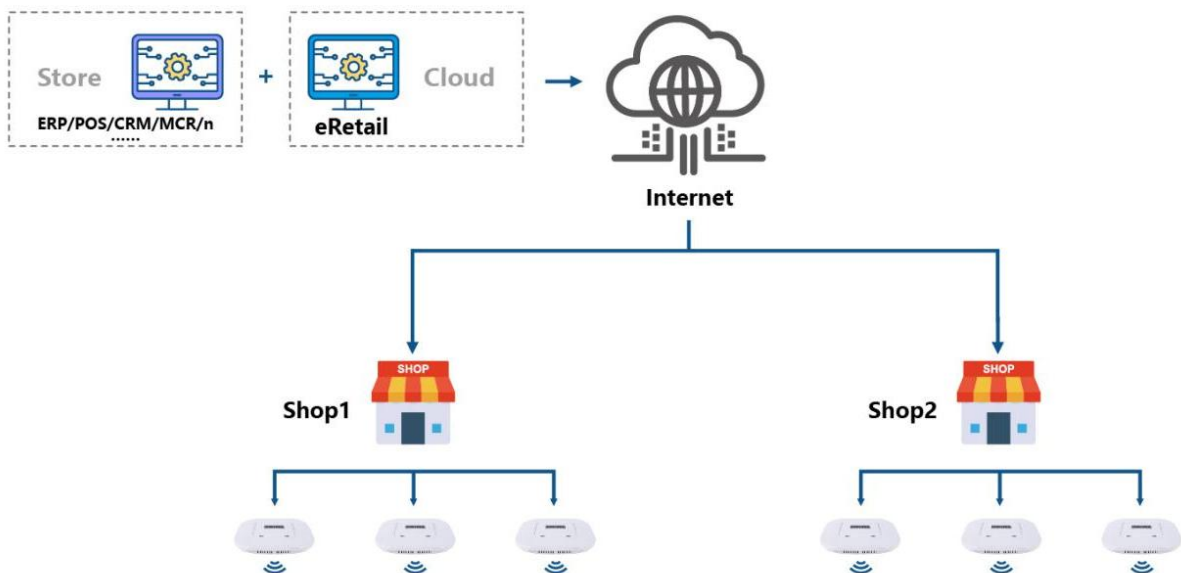


2.1.3. Multiple Network Architectures Available

- ❖ **Local LAN Advantage:** Faster and more secure information transfer



- ❖ **Cloud Advantage:** Product information can be updated anytime and anywhere; multi-store management is more convenient.




2.1.4. Advantages of Zhsunyco[®] eRetail Server

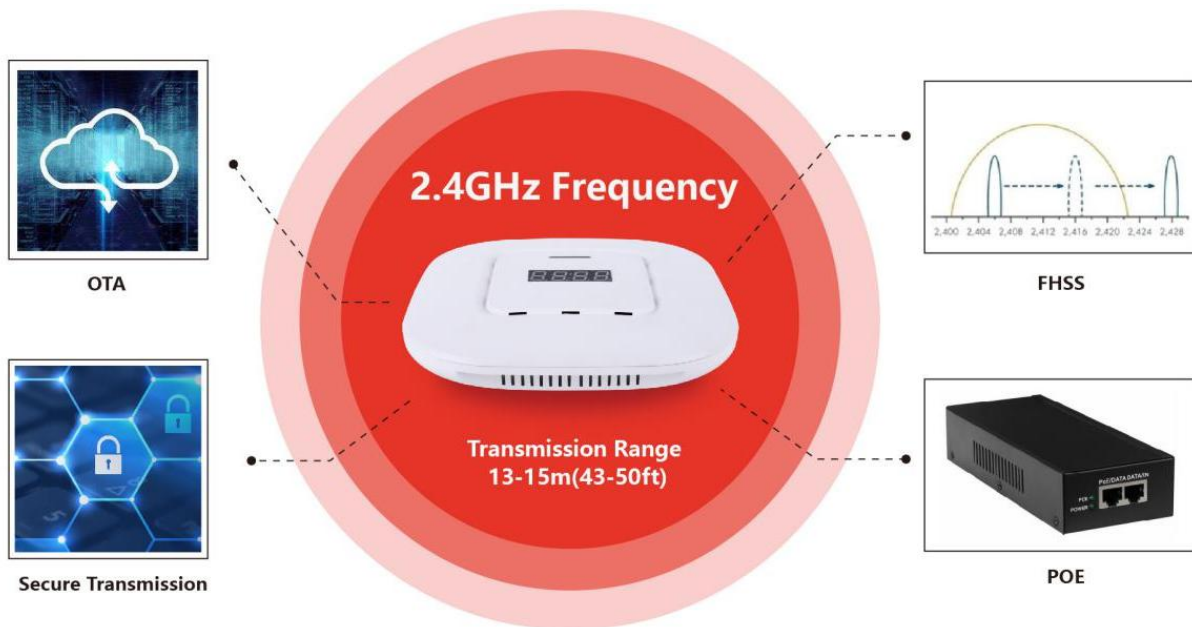
- Server: NET 6.0, cross-platform, Windows, Linux, or macOS. Also support Docker deploy;
- Client App: Android 5.0+, iOS 14.0+;
- 100% Customize interface or UI support.

2.2. Base Station Introduction

2.2.1. Parameters

		Item	Parameters
		Product Model	S-ETAP03-2.5
		H*V*D	190*190*39(mm)
		Weight	285g
		Color	White
Operating Voltage	DC 5V 【using original power supply】	Operating Current	Less than 200mA
Operating Temperature	-10~55℃	Communication Method	2.4Ghz
Storage Temperature	-20~70℃	Communication Distance	13-15m
Storage Humidity	45%~70%RH	Data Interface	Standard Network Cable Interface

2.2.2. Characteristics

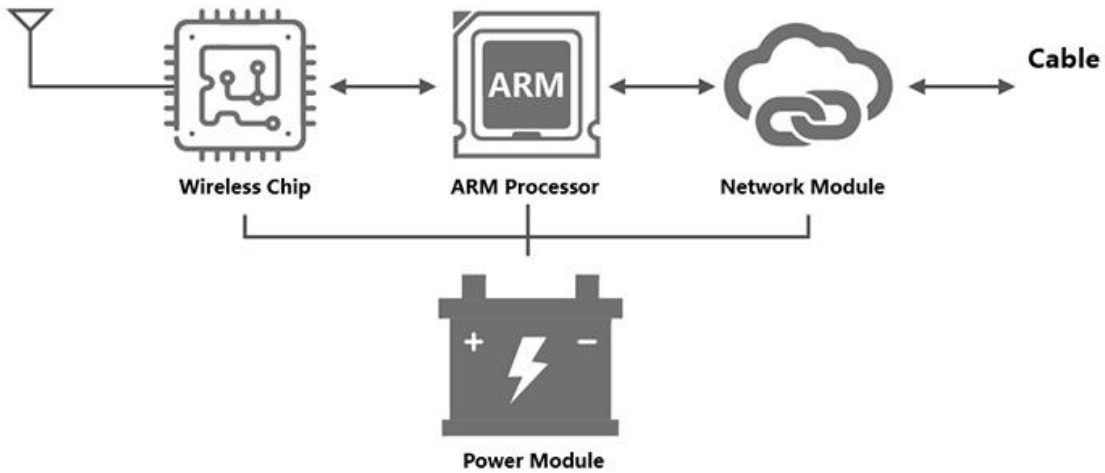


- Over-the-Air (OTA) firmware upgrade: Firmware upgrade via over-the-air download.
- FHSS: Improve the anti-interference of data transmission through frequency hopping spread spectrum technology and ensure 100% label update.
- POE: Support POE technology to simplify wiring and save costs.
- Encrypt on-the-fly: Automatically encrypt data in real time to ensure data security.

2.2.3. Working Principle & Status

■ Working principle:

1. After Base Station power on, the ARM processor to start working, initialize the network chip and wireless chip
2. After initialization, Base Station enters the network receiving state and waits for data from the server
3. When the server has tag data, it sends the data to Base Station through the network.
4. Base Station receives the data and sends it to the corresponding tag by wireless

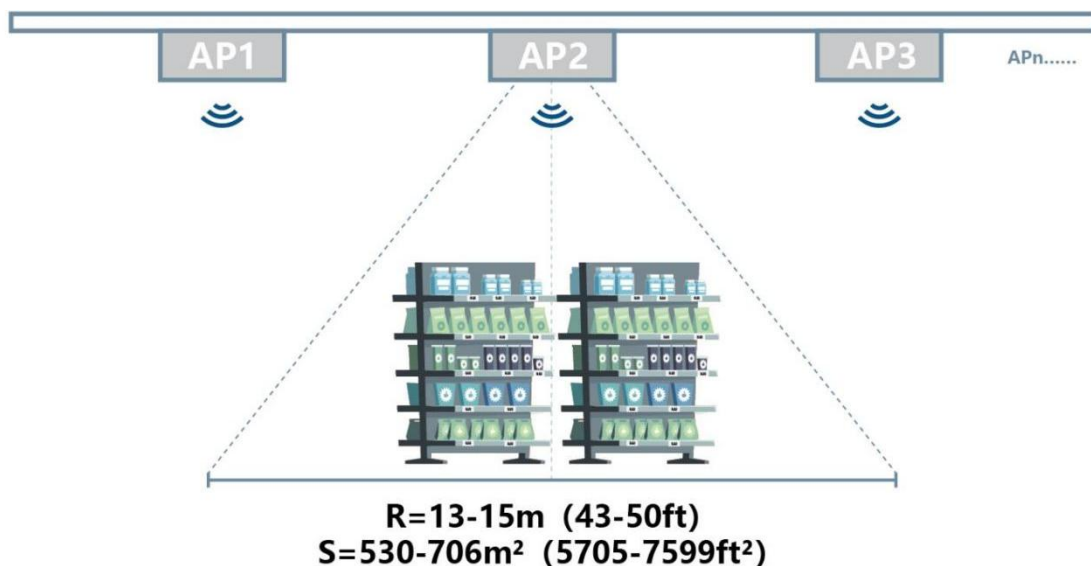


■ Base station status:

1. Power on: plug in the power supply and network cable, the base station screen display "----"
2. Online: computer running ESL software, the base station screen display "H-01"
3. Communicating: software sending data and the base station screen display "C--01"
4. Communication completed: the base station screen display changes from "C--01" back to "H-01"

2.2.4. Control Range

- Connection method: TCP/IP (Private Protocol)
- Control area: Circle with a radius of 13-15m (43-50 ft) (Area 530-706m² (5705-7599ft²))

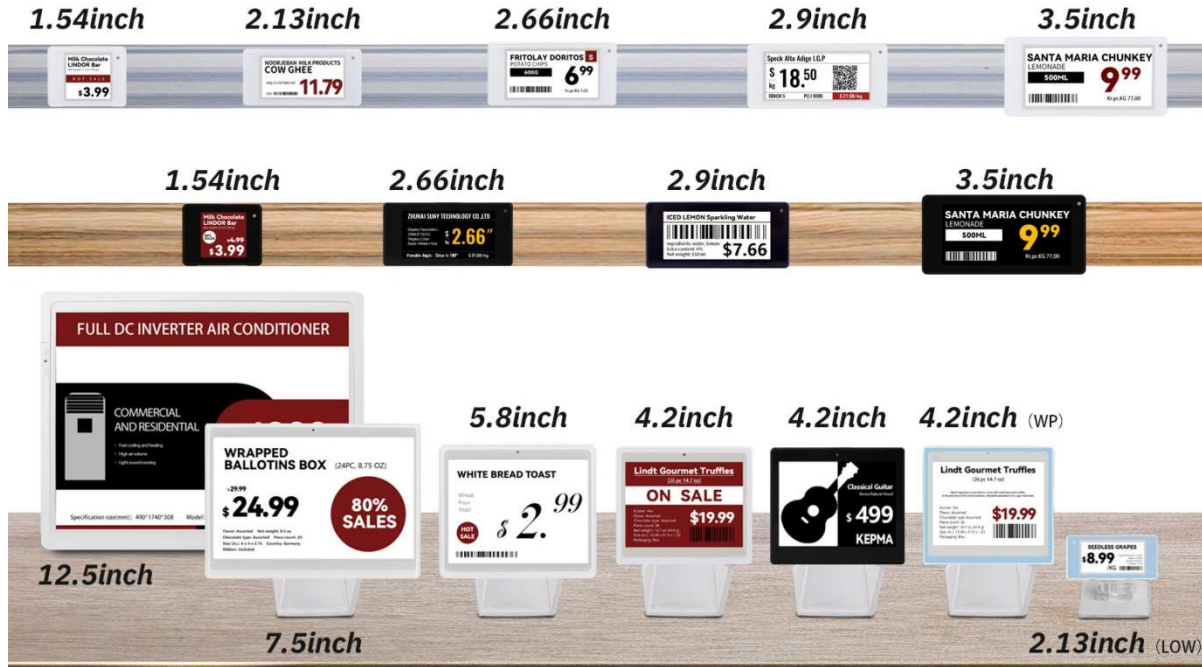


2.3.2.4GHz Electronic Shelf Label

2.3.1.ESL Sizes & Parameters

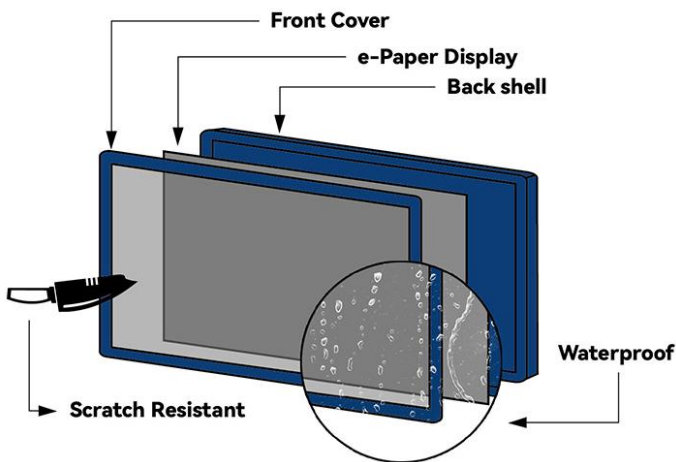
2.4GHz ESL Parameters									
N. o.	Model	Dimensions H*V*D(mm)	Size	Display				Shell Colors	Battery Info.
				L*H(mm)	Resolution	Colors	DPI		
1	S-ET0154-33	49*37.6*13	1.54	27.5*27.5	200*200	B/W/R	188	B/W	CR 2450*1
2	S-ET0213-36	71.3*35.6*12	2.13	48.6 *23.7	250*122	B/W/R	130	W	CR 2450*2
3	S-ET0266-3A	85.8*41.8*12	2.66	60.1*30.7	296*152	B/W/R	125	B/W	CR 2450*2
4	S-ET0290-3D	91.2*41*12	2.9	66.9 *29.1	296*128	B/W/R	112	B/W	CR 2450*2
5	S-ET0350-EE	100.5*48.5*12	3.5	79.7*38.2	384*184	B/W/R	122	B/W	CR 2450*2
6	S-ET0420-40	99.2*89*12	4.2	84.8 *63.6	400*300	B/W/R	119	B/W	CR 2450*2
7	S-ET0430-26	129*42*12	4.3	106*31.5	522*152	B/W/R	125	W	CR 2450*3
8	S-ET0580-4F	134.5*114*9	5.8	118.8 *88.2	648*480	B/W/R	138	W	CR 2450*6
9	S-ET0750-44	178*127*9	7.5	163.2 *97.9	800*480	B/W/R	124	W	CR 2430*6
10	S-ET0213-39 (Low Temp)	71.3*35.6*12	2.13	48.6 *23.7	250*122	B/W	130	W	CR 2450*2
11	S-ET0420-43 (Waterproof)	99.2*89*12	4.2	84.8 *63.6	400*300	B/W/R	119	W	CR 2450*2
12	S-ET1250-58	281.3*229*17.8	12.5	252.976 * 190.896	1304*984	B/W/R	131	W	CR 2450*7
Display		Technology	Dot-matrix E-ink Display		Battery	Battery Life	≥ 6 years		
		Viewable Angle	Close to 180°			Replacement Battery	Available Option		
Communication Info.		Frequency	2.4GHz		Operating & Storage Ambient	Operating Temperature	0~40℃		
		Protocol	Private Protocol			Storage Temperature	0~40℃		
		Distance	13 - 15m			Operating Humidity	45%~70%RH		

2.3.2. ESL Pictures



2.3.3. ESL Structures

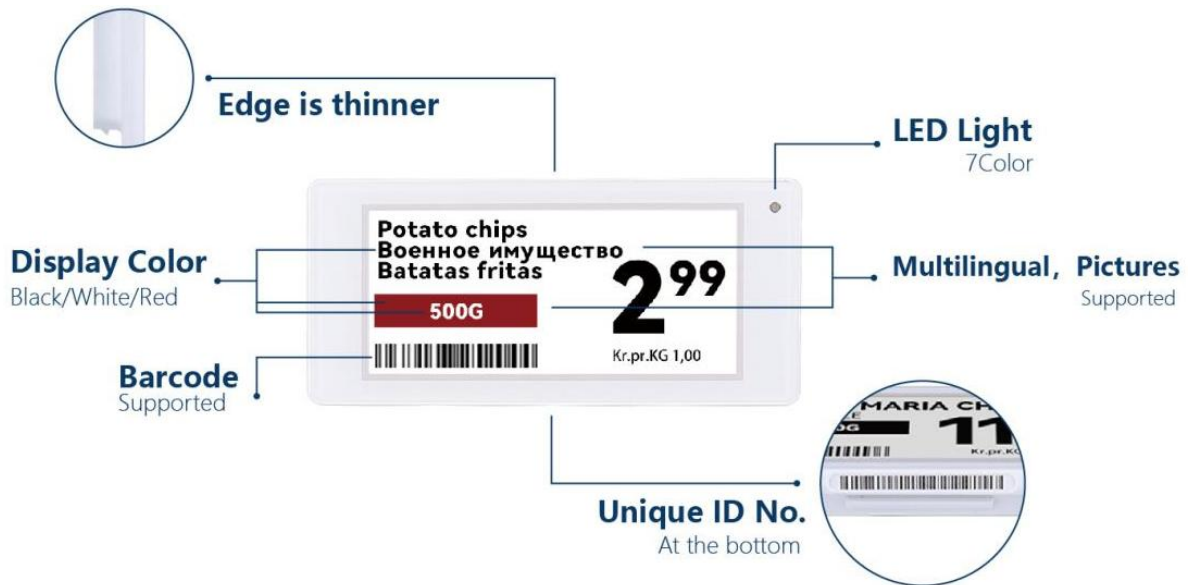
ESL composition: Front cover plate, E-ink display, PCBA board, Battery, Back cover plate.



- The front cover plate is made of 4H hardness acrylic, which has good anti-drop and anti-scratch characteristics.
- E-ink Display: Bistable characteristics, still displaying information after power failure, low power consumption, clear without backlight.
- PCBA Board: STM microelectronics chips.
- Battery: High-performance, life ≥ 6 years.

Note: The waterproof label back cover plate is welded by ultrasonic machine, the battery cannot be replaced. In addition to 4.2-inch label is fully waterproof, other sizes of labels are surface waterproof, if you need full waterproof label can contact us to customize.

2.3.4. ESL Characteristics



- Appearance.

Thin and light design with extremely narrow frame for a better visual experience
 Labeling bottom design, more simple and beautiful.

- Function.

Information display: support for multiple languages, graphics, text, symbols, etc.

NFC function: support NFC communication function (optional)

Temperature detection: support for temperature sampling, system readable

Power detection: each tag supports power sampling and can be read by the system

LED indicators: support 3-color independent control lights, user-defined blinking frequency and color of the indicators

2.3.5. Battery Removal



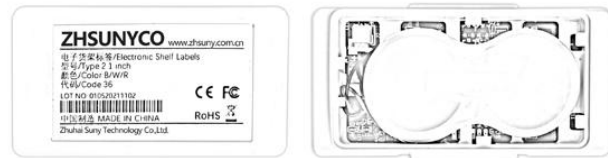
① Turn the end with the ID towards you



② Pry the bottom case off with a tool



③ Drag the bottom case to the left



④ Open successfully

2.3.6. Accessories and Installation



Desktop Holder



Degree Clip



Plastic Rail



Hanger/Clip



Ice Insertion

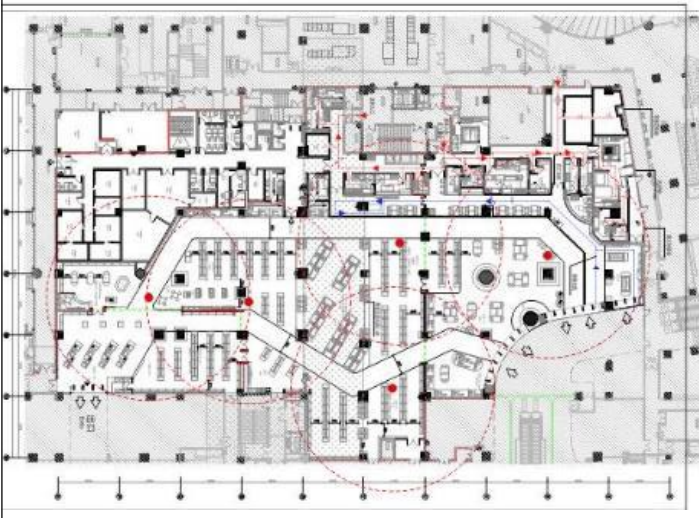


Hanger Clip

Note: This picture listed is regular accessories, if you have other needs, please contact us.

3. Introduction of ESL solution for supermarkets

3.1. Solution Design Case

Store Information		
Store Single Floor Plan	Basic Information	Details
	Chain store?	Yes
	How many floors?	1
	Single floor area	3500 m ² (37660ft ²)
	Product Management System (ERP/POS/CRM/MSS/Other)	ERP
	Store Type	Supermarket
	SKU	25320

Solution Configuration Recommendations				
Region	Part N.o.	Quantity	Accessory Name	Quantity
Fresh Food Area	S-ET0420-40	2280	Hanger Clip, Desktop Holder, Degree Clip	2280
Freezing Area	S-ET0213-39	1140	Plastic Rail	190
Daily Necessities Area	S-ET0213-36	21000	Plastic Rail	4000
Daily Necessities Area	S-ET0290-3D	300	Plastic Rail	50
Fruit & Vegetable Area	S-ET0750-44	600	Hang Ring	600
Total.		25320	Total.	7120
Base stations	S-ETAP03-2.5	13	/	

3.2. Customer Feedbacks



The labels are very elegant and have a very good resolution, they have given the store a more modern touch. The software is easy to adapt and now I can keep all prices up to date without wasting time.

“The Digital Smart Label™ system is very simple and a lot better than paper labels. And it looks a lot cleaner on the shelf. It’s just an excellent product!”



“I think any retailer out there who periodically changes prices would see a lot of return if they tried this technology as well.”

4. After-sales & Common Troubleshooting

(一) After-sales: We will provide videos of installation, deployment and operation; at the same time, we will remotely assist customers with software deployment and label update demonstrations; if necessary, our company relevant technical personnel can provide on-site guidance.

(二) Common Troubleshooting:

- The base station is not online
 1. Whether the base station is connected to a power supply.
 2. Failure to turn off the firewall.
 3. If both of these conditions are met, try pressing the reset button on the back of the base station 20s and then observe if the base station is online.
- When the base station and the computer are connected, the base station network port does not appear in the network connection panel
 1. Use Ethernet to USB converter
 2. The network port is occupied and the occupied port should be removed.
- Electronic Shelf Label cannot be updated
 1. Make sure the tag ID is entered correctly. (For example, consider B as 8, and o as 0)
 2. Low battery power, you should check and replace the battery in time.
- Electronic Shelf Label without information feedback alert
 1. Make sure that the label is within valid control.
 2. Low battery power, you should check and replace the battery in time.

If you encounter any problems in the product or software, or other installation and deployment, please contact us in time, we will assist you to complete the product testing and deployment work as soon as possible.

5. Company Profile

Zhuhai Suny Technology Co.,Ltd. was established in 2016, is a professional manufacturer of intelligent electronic display tags in software development, hardware and product design, solution deployment and after-sales maintenance have a wealth of practical experience in all aspects.

In 2020, we launched to the market zhsunyco® brand is committed to provide better services and solutions for overseas customers. Zhsunyco® adhering to the business philosophy of "customer-oriented", zhsunyco® is committed to intelligent display solutions for retail, industry, warehousing and logistics, helping various industries around the world to reduce paper waste and contribute to the goal of global carbon neutrality.

Zhsunyco® smart display products include electronic shelf labels, e-ink screens and lcd displays. Among them, we have four different communication technology solutions including 2.4GHz, 433MHz, BLE, NFC, in order to meet the needs of different customers in different scenarios.

As of 2021, we have served more than 180 countries and more than 20,000 supermarkets worldwide, enabling customers to successfully move from the traditional retail model to the new retail model.

With 12 years of R&D experience and a hardware and software R&D team of more than 25 people, our factory can provide customized services and complete solutions according to customer needs.

We have obtained 142 utility model patents and 11 invention patents in the electronic label industry. We have 10 QC auditors with five years of experience to control our defective rate to 0.0018%.

ZHSUNYCO[®]

The Alpha 7C is approximately 124.0mm x 71.1mm x 59.7mm and weighs approximately 509g*4, which is similar in size and weight to the APS-C frame camera *5 and only about 1% heavier than the Alpha 6600.

Available pixels: 50.1 million pixels
Continuous shooting speed: 30 pictures/second
Video/High frame rate: 8K,30p/4K,120pFHD,240p
Real-time tracking: Yes
LCD flip: Flip the LCD up and down
Size: 128.9 x 96.9 x 80.8mm
Weight: 737g

Classic Santa Advent Calendar

ON SALE

\$29.99

Chocolate type: Milk Chocolate
Net weight: 10.2 oz (290 g)
Size (in.): 19 x 2 x 14

HOT SALE

Whole wheat bread

\$1.99

Ingredients: Wheat flour
Origin: Canada

Milk Chocolate
LINDOR Bar

Net weight: 3.5 oz (100 g)

HOT SALE

\$3.99

Classic Santa Advent Calendar

\$29.99

Chocolate type: Milk Chocolate
Net weight: 10.2 oz (290 g)
Size (in.): 19 x 2 x 14

Contact Details

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