



# Navigating the Future of Digital Retail with Electronic Shelf Labels



## Operational Advantages of Electronic Shelf Labels (ESLs)

- ESLs serve as a foundational IoT device for stores, facilitating **seamless communication** with other advanced retail technologies.
- The integration of ESLs can **save costs** by reducing labor time needed to update price labels. Using paper labels requires staff to manually type, print, and replace each individual label, whereas ESLs allow the process to be completed electronically in minutes or on an international scale using SaaS cloud management.
- **Full remote management** of price and product information is possible with ESLs, eliminating the need for manual updates. ESLs communicate with backend management systems via a specially calibrated wireless signal transmitted through a ceiling-mounted controller. Hanshow's advanced transmission technology ensures **fast, stable, efficient, timely, and energy-saving** device communication.
- Advances in battery design, component composition, and wireless communication technology have led to a longer ESL lifespan, contributing to sustainability efforts. Hanshow's Nebular ESL, for example, features a battery that lasts **up to 10-15 years** based on twice-daily updates, maximizing the lifespan of this technology.





## Hanshow ESLs are the Cornerstone of Green and Sustainable Retail Digitalization

Hanshow has been consistently investing in the development of solar-powered ESL products. These products utilize advanced solar technology to capture the energy in ambient light, increasing their lifespan and contributing to sustainability efforts. Hanshow has deployed SaaS systems worldwide to manage massive amounts of IoT smart hardware devices and solutions in a way that is energy efficient. The application of Hanshow's SaaS system provides retailers with a better low-carbon management service.

By leveraging ESLs and other advanced technologies, the food and grocery retail industry can make significant strides in combating waste, protecting the environment, and securing a greener future. Expired and unsold food has long plagued the food retail industry, resulting in lost sales and the squandering of precious resources. According to the United Nations, a staggering 1.3 billion tons of food are wasted annually, accounting for one-third of total food production. This food waste is responsible for

6% of greenhouse gas emissions, three times more than emissions from aviation. Implementing effective strategies to reduce food waste in this sector holds tremendous potential for the health of our planet.

As the building blocks of retail digitalization, ESLs are paving the way for store transformation towards a more intelligent, sustainable, and automated operation mode. The devices are recyclable as well – in 2022 alone Hanshow recycled more than 1 million ESL devices.

Hanshow's retail SaaS solution, built on Microsoft Azure, improves energy efficiency by up to

**93%**

and carbon reduction efficiency by

**98%**

compared to local infrastructure solutions.

ESL's dynamic pricing reduces food waste by approximately

**30%**

through discounting soon-to-expire food items at designated times.



In 2022, Hanshow recycled over  
**1 million**  
electronic shelf labels.



## Hanshow ESLs: The Simple IoT Solution for Physical Stores to Go Digital



The ESL is an Internet of Things (IoT) device that replaces paper price tags, displaying product pricing and other information such as product reviews, ratings, and Nutri-Score. ESLs provide retail stores with a range of features that improve operational efficiency, minimize pricing errors, and reduce labor costs by allowing for remote updates of entire labeling systems from centralized servers. In recent years ESLs have evolved into highly efficient, stable, and multi-color devices that use ePaper technology to provide high-definition digital displays with minimal power consumption while performing an increasing number of tasks. ESLs are now driving pricing systems for retailers around the world. Hanshow has grown to become one of the industry's leading developers of this technology with its ESL solutions operating in over 50 countries and regions.

As the building blocks of retail digitalization, ESLs are paving the way for store transformation towards a more intelligent, sustainable, and automated mode of operation. They also provide a unique customer shopping experience with up-to-date price displays, detailed product information, and convenient point of sale functionality. Another standout feature is the ESL's geolocation function. By generating a precise picking route and using various colored flashing lights, it guides delivery order pickers directly to their

next item, leading to a substantial reduction in order picking and delivery times. Additionally, these labels offer expanded display options, providing customers with a wealth of product information at their fingertips.

### How ESLs Improve Employee Well-being, Reduce Waste, and Optimize Store Appearance

From the retail associate perspective, ESLs enhance employee well-being by automating mundane tasks, allowing staff to focus on more rewarding responsibilities and helping customers. The move away from paper labels not only significantly reduces waste but also aligns with the eco-friendly trend of longer ESL product lifecycles. For instance, devices like Hanshow's Stellar Pro or Nebular series boast lifecycles of 10-15 years. Furthermore, ESLs bring a sleek, modern appearance to stores, optimizing planogram management. They also resolve a persistent retail challenge by eliminating pricing discrepancies between labels and registers, a common source of frustration for both retailers and shoppers.

## Digital Pricing and Beyond: Harnessing Technology for Enhanced In-Store Experiences, Cost Reduction, and Sustainability



- ESLs are revolutionizing the retail landscape by enabling **dynamic pricing**, which allows retailers to adjust prices in real-time based on factors such as demand, inventory levels, and competitor pricing.
- Integration of ESLs with inventory and point of sale systems provides retailers with invaluable **real-time data insights**, improving purchasing and marketing decisions.
- QR code integration with ESLs empowers customers to access detailed product information, read reviews, and streamline the checkout process.
- ESL implementation ensures **price accuracy**, reducing checkout discrepancies and saving significant labor hours and costs.
- The future of retail is moving towards comprehensive smart store ecosystems, where ESLs play a central role in digitally monitoring and controlling various store components in order to save energy, optimize layouts, and enhance **operational efficiency**.





## Hanshow's ESL Solutions are Perfect for:



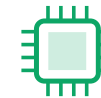
### Grocery

In the bustling aisles of grocery stores, it's imperative to have dynamic and resilient systems in place. Hanshow's ESLs are uniquely designed to adapt to the varying demands of a grocery environment. Whether it's fresh produce exposed to ambient air or products kept in chilled refrigerators, Hanshow's electronic price tags ensure consistent performance, even in challenging conditions. Their versatility not only guarantees accurate pricing but also enhances customer shopping experience by providing clear and up-to-date information.



### DIY & Home Improvement

The world of DIY and home decoration is vast and diverse, with products ranging from delicate home accessories to robust building materials. Such a variety requires an elegant ESL product line that is not only versatile in its application but also aesthetically pleasing. Hanshow's ESL solutions can be effortlessly attached to a plethora of items, guiding customers effectively through aisles and helping them locate the precise tools and materials they need. With Hanshow's solution, customers can navigate stores with ease, making their DIY projects smoother from start to finish.



### Electronics

In the fast-paced and ever-evolving world of electronics, accurate pricing and real-time updates are crucial for customer satisfaction. Hanshow's ESL solutions offer a perfect fit for the electronics industry. With an ability to adapt to rapidly changing prices and product information, Hanshow's ESLs help retailers stay ahead of the competition. Additionally, with clever use of the display feature, customers can receive detailed information on product specifications, price changes, and promotions, making their shopping experience seamless.





## Pharmacy

Pharmacies are more than just places to pick up prescriptions; they are hubs of crucial health-related information. Hanshow's ESL solutions are perfect for this setting, providing instant updates on ingredients, allergy information, and price changes. With the dynamic nature of pharmaceutical products and the importance of accurate information, real-time updates on every shelf become invaluable. Moreover, by automating tasks like price changing and inventory checking, Hanshow's ESLs free up the pharmacy team. This allows them to shift their focus to engaging with customers, ensuring they receive the best service and guidance during their visits.



## Cosmetics

The cosmetic industry is a highly competitive market where brand differentiation is key. In such a scenario, it's essential for retailers to keep up-to-date with product changes and promotions. With Hanshow's ESL solutions, cosmetic retailers can ensure their stores stand out from the crowd. These labels not only provide real-time updates but also allow for easy customization, making it possible to display brand-specific messages and visuals. This enables retail stores to create a unique atmosphere that enhances the overall customer experience.





## About Hanshow

Hanshow is one of the global leaders in the development and manufacturing of electronic shelf labels and digital store solutions. The company offers a series of customized IoT touchpoints and digital store solutions that deliver customer-centric insights. Hanshow's solutions have provided services to a vast number of stores across more than 50 countries and regions, helping them streamline operations, optimize pricing strategies, and offer consumers a more personalized experience.

**Learn more:** [www.hanshow.com](http://www.hanshow.com)

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