Hanshow Stellar-XXXXL E31 Series Product Manual

V1.1.6

HS-ESL-STELLAR102001

STATEMENT

ABOUT THE DOCUMENT

The document describes the specifications, each feature and usage precaution for Stellar-XXXXL E31 series ESLs.

Please read this manual carefully before using this product, retain the manual for subsequent use or for the next owner. If the instructions contained in this manual are insufficient to resolve issues that occur during device operation or maintenance, please contact Hanshow Technical Customer Service Center (China: 400-0365-305; Netherlands: 0800-022-5037; Belgium: 0800-71-335; France: 0800-91-7602; Thailand: 1800-011-185) directly, we will spare no effort to offer multi-channel technical services for you.

TARGET USERS

This document provides engineers with the necessary data and detailed usage precautions of Stellar-XXXXL E31 series ESLs. Users have to master the basic knowledge on communication and Network. This document is applicable for the below engineers:

- Testing engineer
- Technical support engineer
- After sales engineer
- Installation engineer

SYMBOL DESCRIPTION

Icon	Description
⚠	Information indicated with this icon should be paid special attention and attached great importance by the reader.
🕮	Information indicated with this icon is the explanation on the formal text for the readers to comprehend the text better.
[X-X]	It means special noun definition is provided here.

EXPLANATION OF TERMS

Term	Expanded form	Description
PriSmart	PriSmart Smart Retail System	Manage all store product data and issue price update command, as well as support multi-store management.
ESL-Working	ESL-Working System	Manage all the APs and ESLs in store, and ESL-Working 3.0 and above supports multi-store management.
ESL Controller	ESL Controller	Also called AP that is used for data interaction between ESL-Working and ESL Controller.
ESL	Electronic Shelves Label	Used for displaying product information like promotion information, price and grade, etc.

Table of Contents

1 Overview

Stellar-XXXXL E31 series is an Hanshow's Electronic Shelf Label (ESL) for data transmission and information interaction with the AP and ESL-Working system based on 2.4GHz private protocol. It features bi-directional communication, remote control, NFC, fast flashing, multi-page switch and multi-color selection function. Stellar E31 series has the high-definition visual effects, convenient and unified management and long life advantages, widely serving traditional retail, new retail, apartment store and fashion, medicare, culture and entertainment, etc.

The Stellar-XXXXL E31 models include Stellar-XXXXL@ E31, Stellar-XXXXL@ E31A, Stellar-XXXXLN@ E31, Stellar-XXXXLN@ E31A, Stellar-XXXXL3@ E31, Stellar-XXXXL3@ E31A, Stellar-XXXXL3N@ E31, Stellar-XXXXL3N@ E31A, Stellar-XXXXL3Y@ E31, Stellar-XXXXL3Y@ E31A, Stellar-XXXXL3YN@ E31, Stellar-XXXXL3YN@ E31A, etc.

2 Specifications and characteristics

This chapter describes the product information, product view, specifications and function description of the Stellar-XXXXL E31 series.

2.1 Product information

Table 2-1 Stellar-XXXXL E31 product information

Marketing name	Color	ID rule
Stellar-*XXX* E31*X*[2-1]	● Case color: White (Customizable) ● The supported EPD screen colors: black/white, black/white/red and black/white/yellow	Total of 18-digit ID

Note: [2-1]: *XXX* and *X* represents optional hardware. For example, Stellar-XXXXL3N@ E31.

- XXXXL is: 10.2 inch
- 3 is: Three colors of black, white and red
- Y is: Yellow
- N is: NFC chip
- A is: No reed switch
- @ is: LED indicator

2.2 Product view

Below are the Stellar-XXXXL E31 appearance and each part. its six-views and each area description is shown in *Figure 2-* and *Table 2-2*.

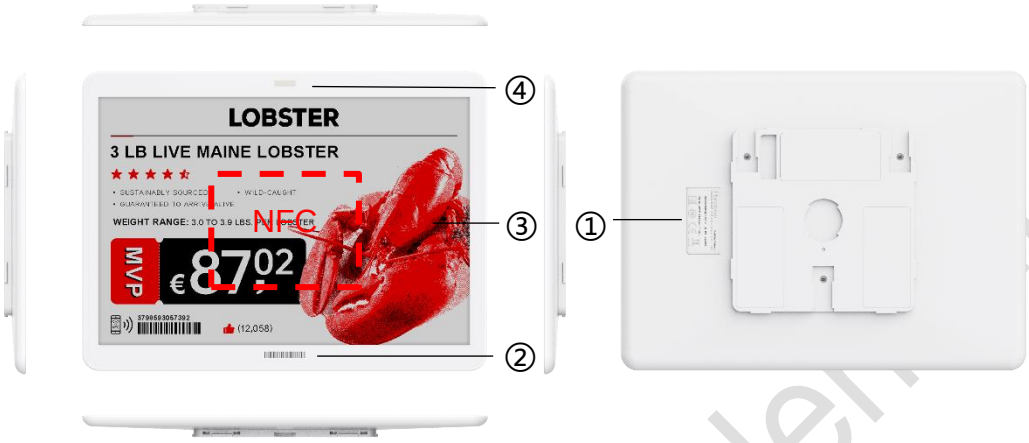

Figure 2-1 Six views of Stellar-XXXXL E31

Table 2-2 Stellar-XXXXL E31 area description

No.	Name	Description
1	LED area	Support for RGB tricolor LED flashing.
2	Screen area	E-paper screen, support three colors (black/white, black/white/red and black/white/yellow) display schemes, NOT SUPPORT grayscale.
3	Barcode area	18 digits barcode used for binding product and maintenance.
4	Nameplate	Product information mark, including Model, S/N and certifications. Note each S/N is unique, and Each type of ESL's MODEL is different. The content above is for reference only.
5	NFC induction area	See the red dotted square shown in *Figure 2-*

2.3 Specifications

Stellar-XXXXL E31 specifications are shown in *Table 2-3*.

Table 2-3 Stellar-XXXXL E31 specifications

Name	Description
Dimensions (mm*mm*mm)	235.5*174.0*12.5
Active display area (mm*mm)	215.5*143.7
Weight (g)	353.8
Case	Elegant White (Customizable with different-color case)
Display size (inch)	10.2
Resolution (pixel)	960*640[2-2]
DPI	113[2-2]
Display effect	EPD e-paper display screen, including black/white, black/white/red and black/white/yellow
Viewing angle	Nearly 180 degree
Working life	3 ~ 5 years[2-3]
NFC function (Optional)	The "N" in the product model indicates NFC function. It has the following features: ● Conforms to ISO/IEC 14443 Type A standard. ● Supports NFC NDEF data format. ● With 200 byte storage space, and write content configurable. ● Maximum 1cm communication distance. ● Greatly improve the batch data transmission rate of ESLs with the same template.
Page switch	Supports up to 4 pages
Battery specification	600mAh*6
Battery replaceability	Replaceable (Compatible with Hanshow standard battery)
Protection level	IP65
Operating temperature	0℃ ~ 30℃

Name	Description
Storage temperature	0℃ ~ 30℃
Humidity	30% ~ 70%
Certifications	ROHS, CE ,FCC,MIC

Note:

- [2-2]: The resolution and DPI varies slightly with different screen.
- [2-3]: For EPD ESLs with black/white or black/white/red, the life at room temperature is about 5 years, while 3.5 years in refrigerated environment. For EPD ESLs with black/white/yellow, the life is about 3 years at room temperature or refrigerated environment.

Stellar-XXXXL E31 can perform flashing, page switch, update and others, and its usage standards are as shown in *Table 2-4*.

Table 2-4 Stellar-XXXXL E31 usage standards

Name	Description
LED flashing	1 hour/day (on=30ms, off=120ms, on=30ms, off=1200ms flashing)
Frequency of update	Twice/day
Frequency of page switching	Once/day

⚠Notice:

- The battery output power at low temperature may decline differently because it is subject to environment temperature.
- If the screen is stored or used outside the above conditions, its life will be affected.

2.4 Function description

The basic functions of Stellar-XXXXL E31 are shown in *Table 2-5*.

Table 2-5 Stellar-XXXXL E31 basic function

Name	Function	Description
Screen display area	Screen display	● Using dot matrix screen that has ultra-wide viewing angles, high-contrast, and mirrorless, adapting to complex light environment. ● Flexible display information such as text, digit, image, barcode, QR code and others. ● All information in display areas are independent elements such as name, price, place, unit, spec/specs, phone number, barcode, QR code. Their display place and font size is custom. ● Supports up to 4 pages of storage content and page switch function.
LED display function (Optional)	Flashing light	Supports RGB tricolor-LED
		LED flash cycle is configurable[2-4]
		Supports marquee function
Remote control function	Flashing light	Supports flashing light function via remote control
	Page switch	Supports page switch via remote control
NFC function	ESL management	● ESL bind/unbind ● Lighting control ● Page switch control ● Data operation for private area and public area
Temperature acquisition	Range	0℃ ~ 40℃ (only for red screen)
	Accuracy	±2℃

Note: [2-4]: Adjustable flashing cycle: 30ms ~ 7s, smallest unit of 30ms.

3 Product performance

This chapter introduces the performance parameters and benefits of Stellar-XXXXL E31 series.

3.1 Performance parameters

The performance parameters of Stellar-XXXXL E31 series are shown in *Table 3-1*.

Table 3-1 Stellar-XXXXL E31 series product performance

RF parameters	
Transmission band	2402MHz ~ 2480MHz
Transmit Power	Maximum 1dBm
System throughput	
Average rate	10000 tags/hour
Peak rate	18000 tags/hour

3.2 Performance benefits

The performance benefits of Stellar-XXXXL E31 series are as follows:

- Support bi-directional communication and wider coverage range.
- Multiple installation ways and suitable for different scenarios.

4 Precautions

This chapter emphasizes the transportation and use precautions of Stellar-XXXXL E31 series. Please follow the items below to ensure that Stellar-XXXXL E31 series can work normally.

4.1 Transport consideration

The transport considerations for Stellar-XXXXL E31 series are as follows:

- No water ingress during transportation.
- Do not extrude ESLs to avoid screen broken.
- The transportation environment should not exceed 40℃.

4.2 Precautions for use

The precautions for use of Stellar-XXXXL E31 series are as follows:

- ESLs operates best in normal temperature and humidity range (0℃ ~ 30℃, RH 30% ~ 70%).
- Do not store or operate ESLs when the environment temperature is over 60℃.
- The output capacity will degrade at low temperature.
- Frequent communications or updates may shorten batter life during the use.
- Do not toss or violent operations for ESLs, avoiding the circuit board damaged.
- Do not disassemble ESLs without permission.
- The mineral substances in rainwater, moisture or liquids may corrode the electronic circuit. If ESL is wetted, please deal with it quickly.
- Clean the screen and maintain cleanliness regularly.
- Promptly remove cosmetics, perfume and other dirty on ESLs to avoid screen, case or lens damaged.
- Do not wipe the screen with chemical detergent.
- Do not install ESLs in a strong magnetic environment.
- ESLs communications may be limited or affected by other devices that share the 2.4GHz frequency-band such as Wi-Fi, BT or Zigbee.
- Do not place ESLs near kitchen appliances such as a stove, a microwave oven.

5 FCC ID warning

5.1 Warning for nameplate

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.

5.2 Warning for product manual

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

6 Application scenarios

ESLs can be applied to various areas and shelves of hypermarket, supermarket and retail stores. Stellar-XXXXL E31 series products are widely used for the below areas and scenes:

- Regular shelf racking areas
- Regular shelf hook areas
- Regular fence areas
- Regular floor display areas

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