HANGZHOU CENTURY CO., LTD
Address : 1418-48# Moganshan Road,
Hangzhou Zhejiang, P.R.China
www.century-cn.com
400-6571160

Smart Shelf Counter

Instruction Manual

Model: CE39034

Contents

1. Product introduction

Smart shelf counter is a set of shelf intelligent monitoring system, which can monitor the number of goods on shelf, shortage, replenishment reminder and other functions in real time. The system is mainly composed of Smart Shelf Counter, Communication Module, electrified guide rail, thruster and base station transceiver; it is suitable for all products with regular shape packaging.

Components of smart shelf counter:

↓ **Communication Module:** Measuring the quantity of commodities, communicates with the base station, supply power to the Smart Shelf Counter on the same rail, and supply power to the Communication Module on other rails.

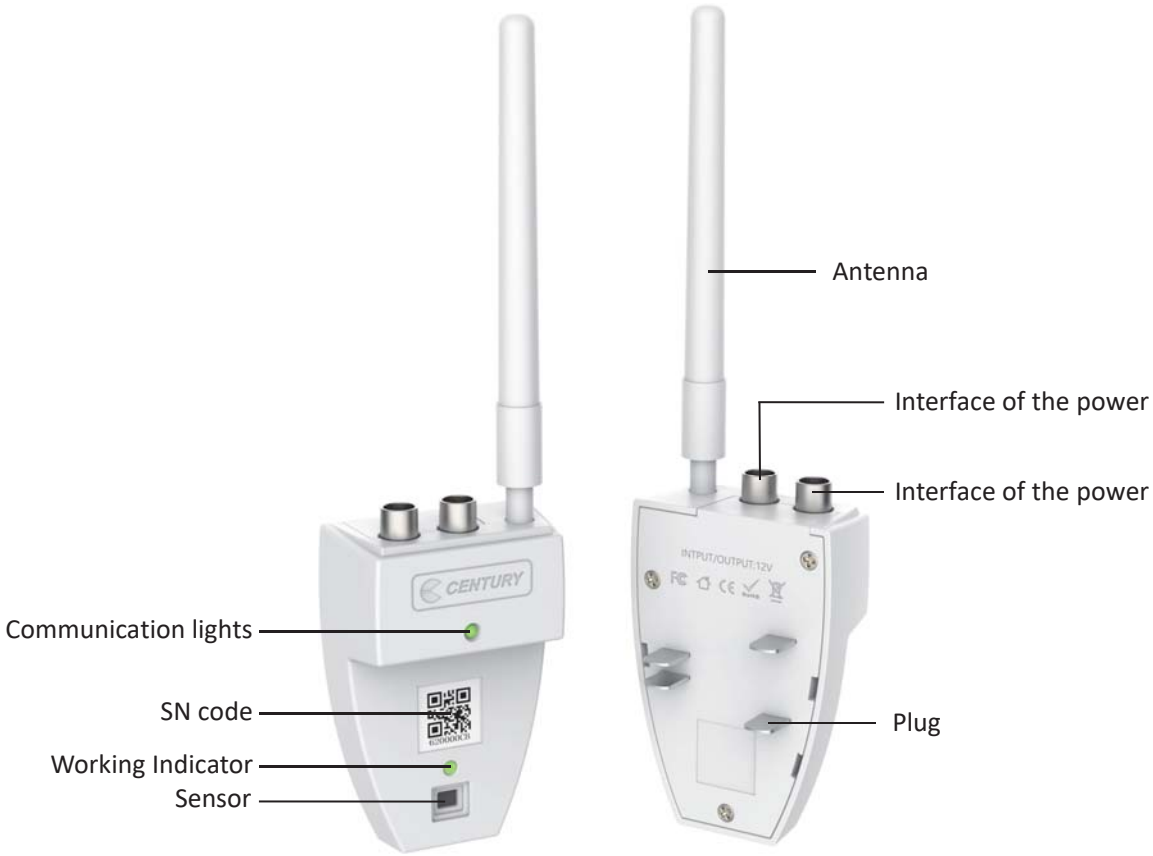


Figure 1.1 Communication Module

Meaning of Communication Module indicator↓:

	Status	**Meaning**
Communication indicator	The red light is always on	Not connected to base station
	The green light is flashing	Communicating with base station
Work indicator	The green light is always on	standby
	The green light is flashing	Measuring distance

↓ **Smart Shelf Counter:** Measure the quantity of goods and communicate with the Communication Module on the same guide rail.

Figure 1.2 Smart Shelf Counter

Meaning of indicator light of Smart Shelf Counter↓:

	Status	**Meaning**
Work indicator	The red light is always on	Not connected to base station
	The green light is always on	standby
	The green light is flashing	Measuring distance

↓ **Reflective Plate:** It is used to reflect the infrared radiation from the Communication Module / Smart Shelf Counter sensor.

Figure 1.3 Reflective Plate

↓ **Rail:** It is used to install Communication Module and Smart Shelf Counter.

Figure 1.4 Rail

↓ **Rail fixing frame 1:** It is used to fix the rail on the wooden shelf.

Figure 1.5 Rail fixing frame 1

↓ **Rail fixing frame 2:** It is used to fix the rail on the shelf of hole plate.

Figure 1.6 Rail fixing frame 2

↓ **Plug:** It is installed at both ends of the guide rail to avoid scratching the installation personnel.

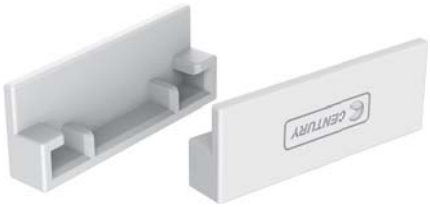


Figure 1.7 Plug

↓ **Connector Assembly (optional):** For connecting two rails.

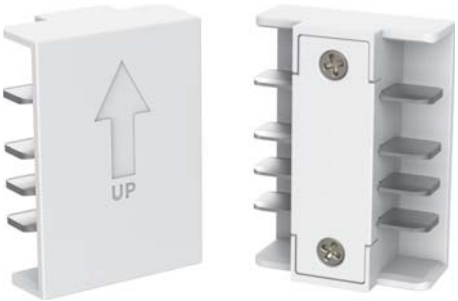


Figure 1.8 Connector Assembly

↓ **Power adapter:** Power supply for Communication Module (12V/7A,12V/3A).

Figure 1.9 Power adapter

↓ **DC Cable(optional):**Connecting two Communication Modules.

Figure 1.10 DC Cable

↓ **Base Station:** Wireless communication with Communication Module.

Figure 1.11 Base Station

2. Installation mode

2.1 To use the products in this scheme, the following conditions shall be met:

Commodity width = (shelf depth - 60mm) * tan9.5

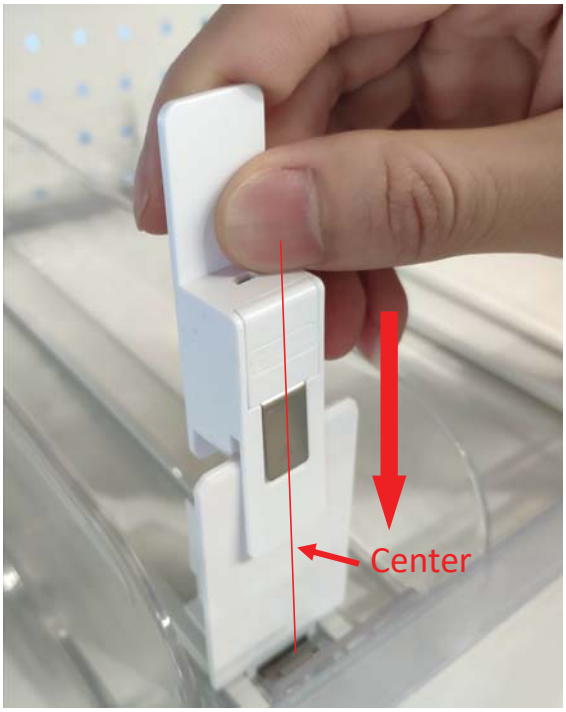
EX: When the shelf depth is 300 mm, the distance between the dividing plates for placing goods shall be no less than 40 mm, as shown in Figure 2.1.1↓

EX: When the shelf depth is 400mm, the distance between the partition boards for placing commodities is ≥ 57mm, as shown in Figure 2.1.2↓

↑ Figure 2.1.1

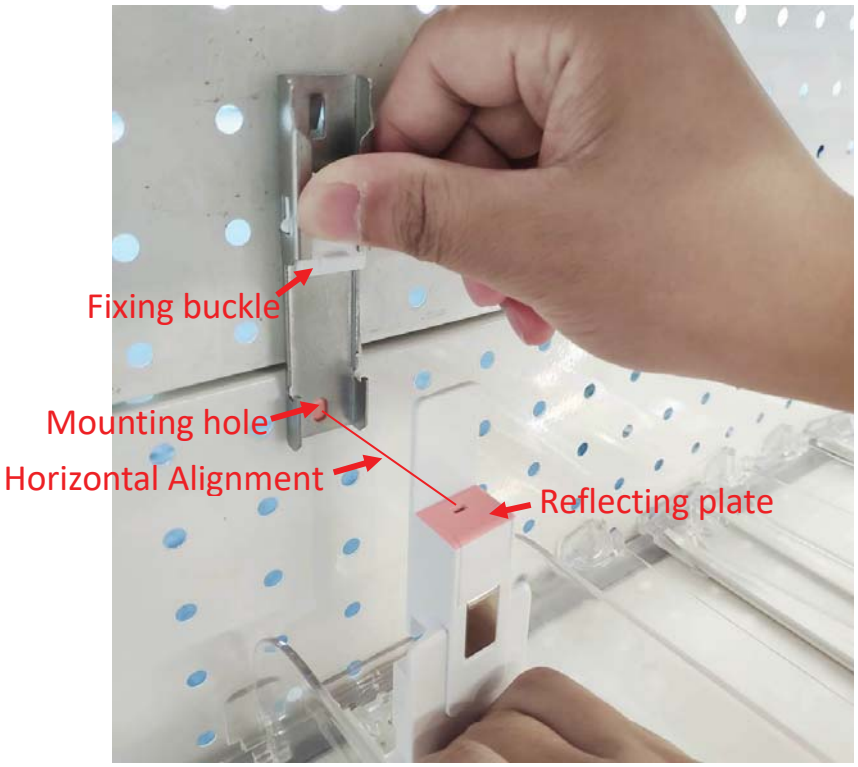
↑ Figure 2.1.2

2.2 Fix the Reflective Plate on the coil spring box of a propeller. Pay attention to the center of the Reflective Plate and the coil spring box, as shown in Figure 2.2↓.



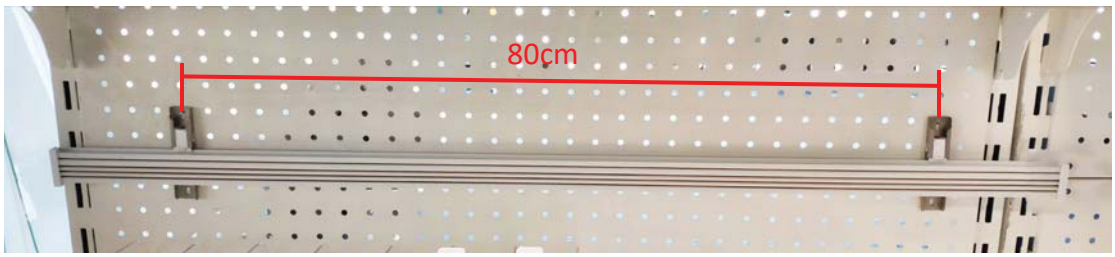
↑Figure 2.2

2.3 Push the Reflective Plate to the innermost part of the shelf, take a guide rail fixing frame close to the inside of the shelf, with the fixing buckle upward, and place it vertically, so that the mounting hole under the guide rail fixing frame is aligned with the steps on the Reflective Plate, as shown in Figure 2.3.1↓.



↑ Figure 2.3.1

It is recommended to use two guide rail fixing frames to fix one guide rail at this height, and the recommended distance between guide rail fixing frames is 80cm, as shown in Figure 2.3.2↓.



↑ Figure 2.3.2

Installation method of guide rail bracket:

***Wooden shelf:** It is suitable for guide rail fixing frame 1. Use two cross countersunk wood screws 4 * 16 to fix the two mounting holes on the guide rail fixing frame 1, as shown in Figure

2.3.3↓;

↑ Figure 2.3.3

***Shelf with hole plate:** It is applicable to guide rail fixing frame 2. ① hook the upper end of guide rail fixing frame 2 into the hole of hole plate. ② tear off the double-sided adhesive tape on the back of the shelf and stick it to the back plate of the shelf, as shown in Figure 2.3.4↓.

If double-sided adhesive tape is not used, the cross-pan head self-drilling st4.2 * 16 screw can be used to fix the lower hole, as shown in Figure 2.3.5↓.

↑Figure 2.3.4

↑ Figure 2.3.5

In the same way, install the guide rail fixing frame at other positions. If the guide rail is very long, multiple guide rail fixing frames can be installed.

2.4 Take out the guide rail, install plugs at both ends of the guide rail, and the arrow mark is pasted on the back of the guide rail (as shown in Figure 2.4.1 ↓), and the arrow is installed upward. First, buckle the lower part of the guide rail to the lower part of the rail fixing frame (as shown in Figure 2.4.2 ↓), and then press the upper end (as shown in Figure 2.4.3 ↓) to make the fixing buckle installed in place. After installation, it is shown in Figure 2.4.4↓.

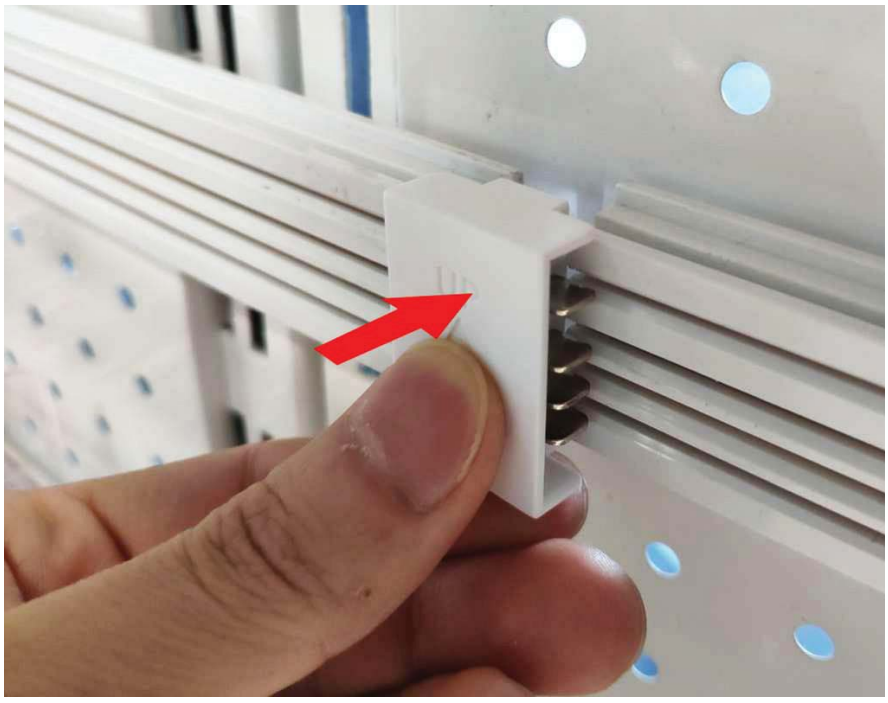
↑ Figure 2.4.1

↑ Figure 2.4.2

↑ Figure 2.4.3

↑ Figure 2.4.4

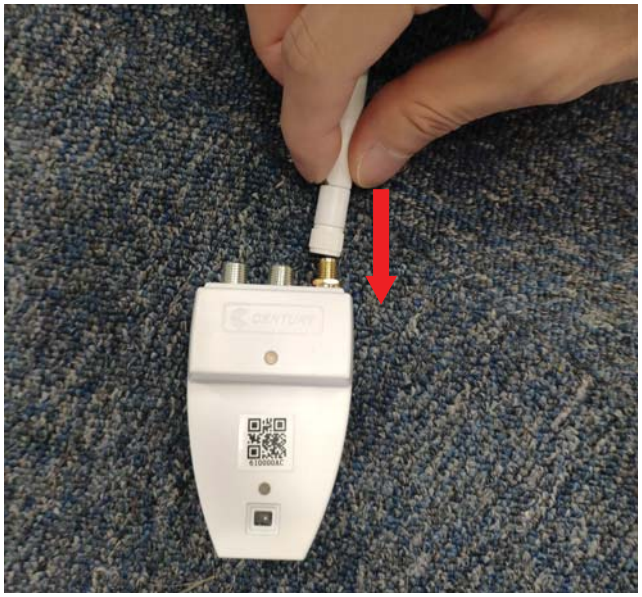
2.5 The connector assembly can be used to connect the two guide rails. Pay attention to that the arrow on the connector assembly is upward, and the plug is pressed into the two guide rails at the same time. Pay attention to press it to the bottom, as shown in Figure 2.5.1↓, and as shown in Figure 2.5.2↓ after installation. The connector assembly is optional and needs to be purchased separately.



↑Figure 2.5.1

↑ Figure 2.5.2

2.6 Install the antenna on the Communication Module, as shown in Figure 2.6↓.

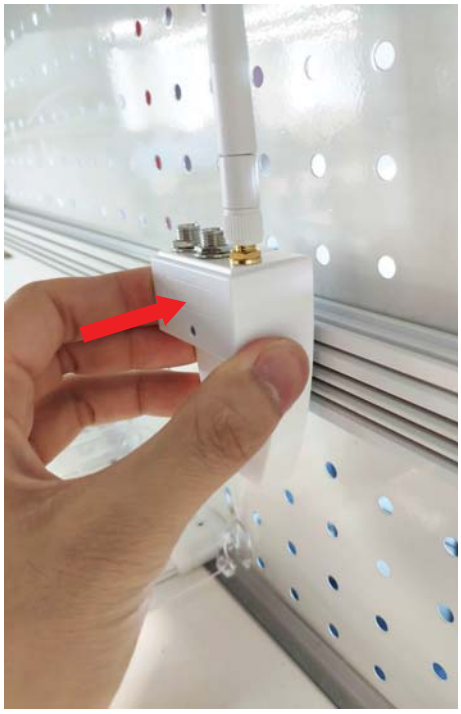


↑ Figure 2.6

2.7 Put the Communication Module on the guide rail, do not press it into the guide rail first, push the reflection plate on the propeller to the bottom, so that the sensor on the Communication Module is aligned with the middle position of the reflection plate, as shown in Figure 2.7.1↓. Then press the Communication Module into the guide rail, as shown in Figure 2.7.2↓. Pay

attention to align the plug on the host with the slot on the guide rail. In the same way, install other Communication Modules as required. If it is necessary to remove the Communication Module, pull it out from one side of the product, as shown in Figure 2.7.3↓.

↑ Figure 2.7.1



↑ Figure 2.7.2

↑ Figure 2.7.3

2.8 Take out the power adapter and connect the power cord and adapter, as shown in Figure 2.8↓

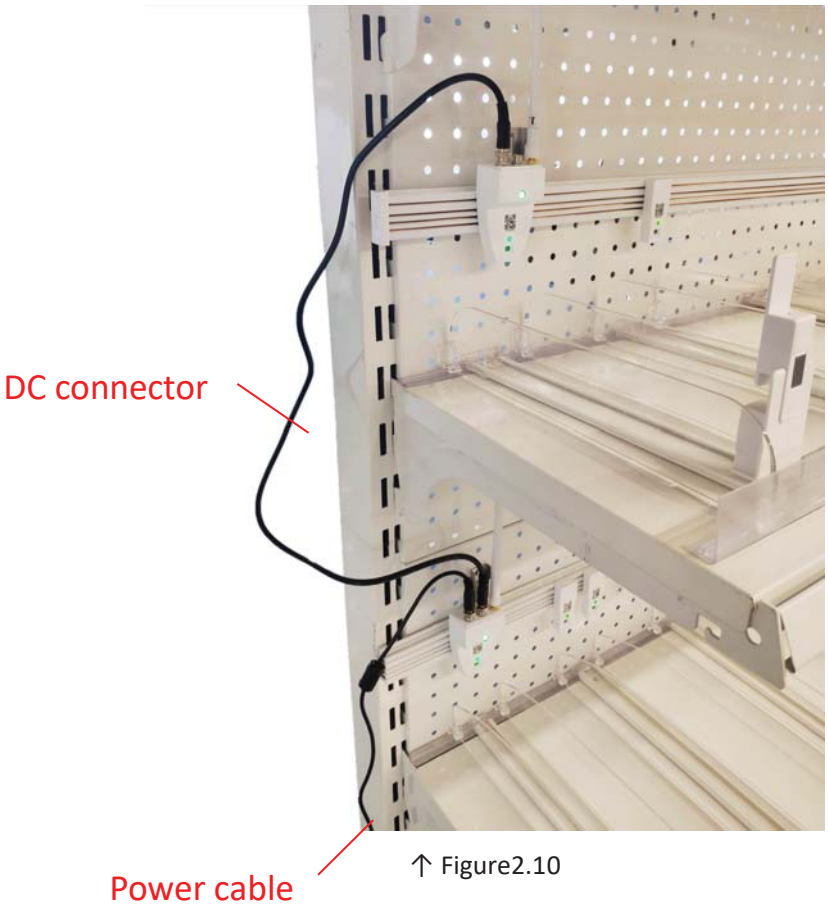
↑ Figure2.8

2.9 Insert the DC plug on the adapter into the DC socket of the Communication Module and tighten the thread to prevent the plug from loosening. As shown in Figure 2.9↓, connect the power adapter to the mains power.

↑Figure 2.9

2.10 DC cable can be used to connect multiple Communication Modules, as shown in Figure 2.10 ↓, so that one power adapter can supply power to multiple hosts. DC cable is optional and needs

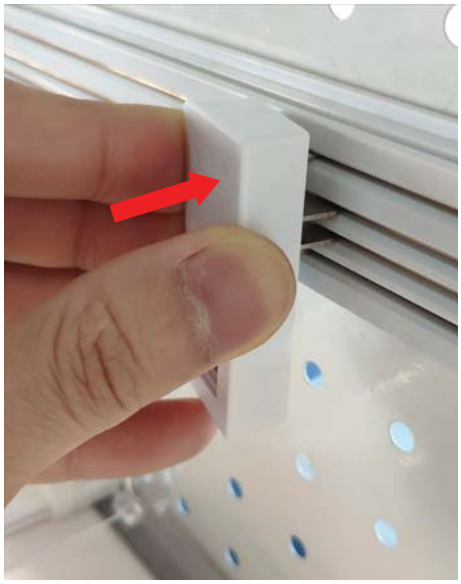
to be purchased separately.



↑ Figure2.10

2.11 Place the Smart Shelf Counter on the guide rail, do not press it into the guide rail first, push the reflector on the propeller to the bottom, so that the sensor on the Smart Shelf Counter is aligned with the middle position of the Reflective Plate, as shown in Figure 2.11.1↓. Then press the Smart Shelf Counter into the guide rail, as shown in Figure 2.11.2↓. Pay attention to align the plug on the host with the slot on the guide rail. In the same way, install other Smart Shelf Counters according to the requirements. If it is necessary to remove the Smart Shelf Counter, pull it out from one side of the product, as shown in Figure 2.11.3↓.

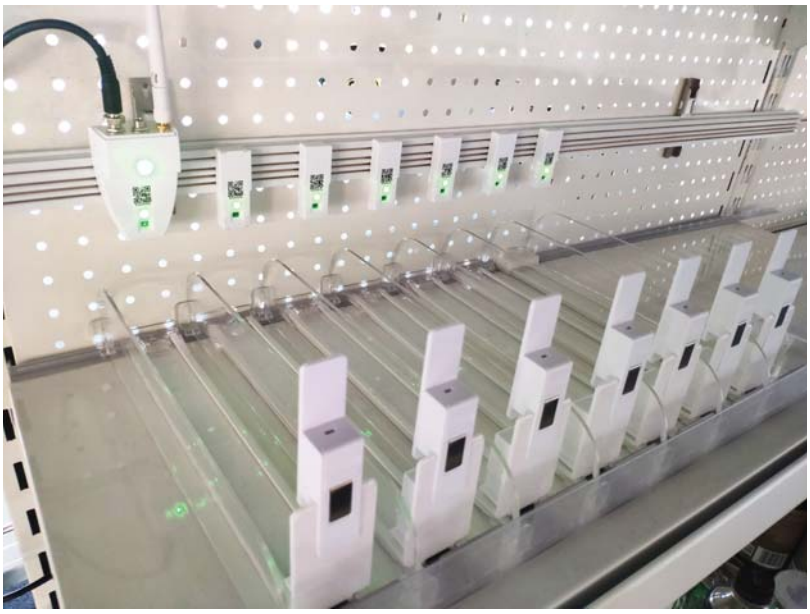
↑Figure 2.11.1



↑ Figure 2.11.2

↑Figure 2.11.3

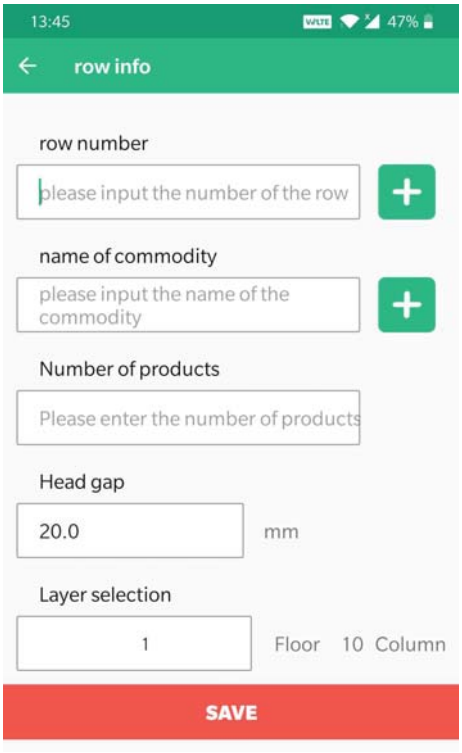
2.12 After installation, it is shown in Figure 2.12↓



↑ Figure 2.12

3. Binding products

3.1 Open the commodity management software and enter the "row info" page, as shown in Figure 3.1↓;

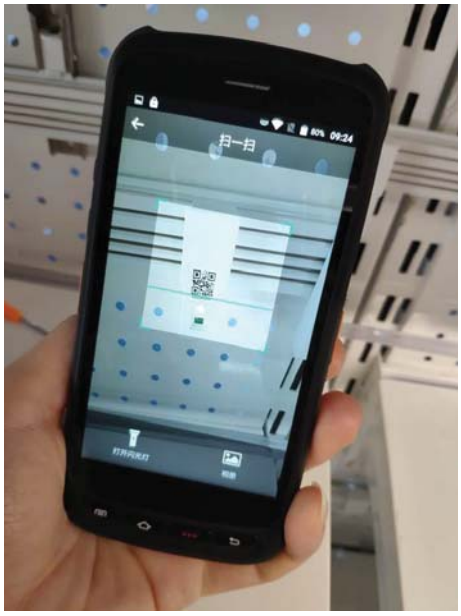


↑ Figure 3.1

3.2 Click and select the "row number" input box and input the row number. The row number is the SN code on the front of the Communication Module and the Smart Shelf Counter. There are three methods to input:

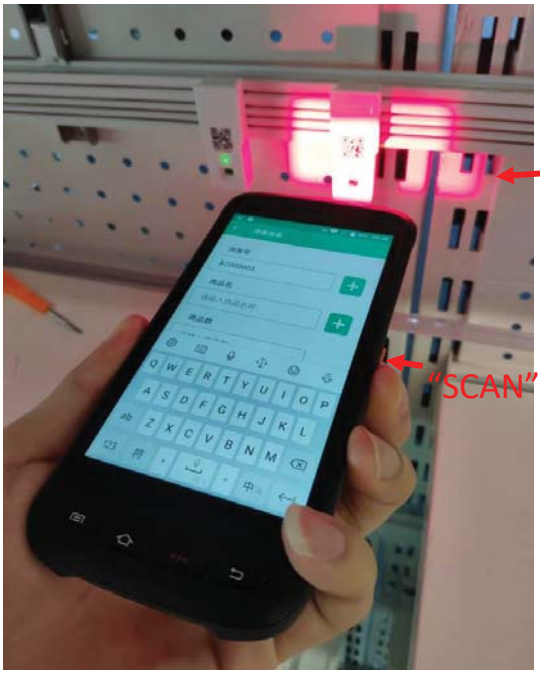
Method ①: Input Sn code manually

Method ②: Click the "+" on the right side of the "row number" input box to scan the SN code on the Communication Module or Smart Shelf Counter, as shown in Figure 3.2.1↓.



↑ Figure 3.2.1

Method ③: If the matching ht305 handset is used, long press the "scan" button on the left or right to scan and input the red light emitted by the handset at Sn code, as shown in Figure 3.2.2↓.



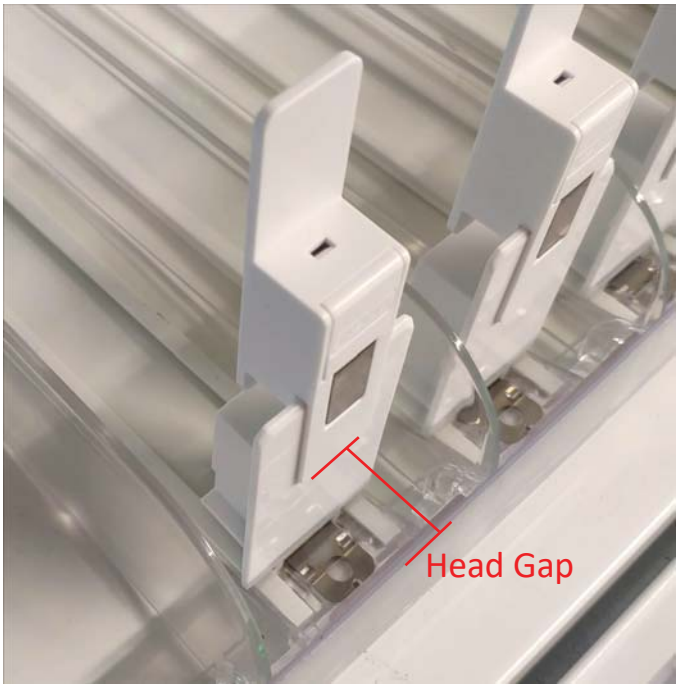
↑ Figure 3.2.2

3.3 Click the "+" on the right side of the "name of commodity" input box to scan the SN code on the Communication Module or Smart Shelf Counter, as shown in Figure 3.3↓.

↑ Figure 3.3

3.4 Input the quantity of goods in the row in the "number of products" input box;

3.5 In the "head gap" input box, input the distance from the reflector to the outermost side of the propeller, as shown in Figure 3.5↓



↑ Figure 3.5

3.6 After inputting the number of layers in the "layer selection" input box, click "save" to complete the binding of goods.

4. performance parameter

Communication Module:

Appearance	
Measurement	80 x 50 x 34 mm(antenna 115mm)
Weight	52g
Indicator	Red and Green
Times of plug	≥1000 times
Insertion and extraction force	10N~50N
Wireless operating frequency band	2.402~ 2.482GHz
Wireless transmission power	14dBm
Wireless communication distance	15m~ 50m
Input voltage	DC10V~12V
Working power consumption	≤500mw
Ranging accuracy (error)	≤1.5CM
Ranging width / depth limit (two groups and above)	When the depth = 40cm, the width should not be less than 5.7cm When the depth = 30cm, the width should not be less than 4.0cm
Measure the load capacity of the main engine	≤20pcs

Query Communication Module time	500ms
Query the Smart Shelf Counter time	0~4S (20PCS Smart Shelf Counter)
working temperature	0~45℃
Working humidity	≤70%RH
Storage temperature	-20℃~60℃
Chemical resistance	NO
Protection level	IP53

Smart Shelf Counter:

appearance	
Measurement	56 x 23 x 22 mm
Weight	14g
Indicator	Red and green
Times of plug	≥1000 times
Insertion and extraction force	10N~50N
input voltage	10V~12V
Working power consumption	≤500mw
Ranging accuracy (error)	≤1.5CM
Range width / depth limit (two groups and more)	When the depth = 40cm, the width should not be less than 5.7cm When the depth = 30cm, the width should not be less than 4.0cm
wire communication	485 bus communication distance ≤ 10m (between Smart Shelf Counter and Communication Module)

Single query time	≤200ms
working temperature	0~45℃
Working humidity	≤70%RH
Storage temperature	-20℃~60℃
Chemical resistance	NO
Protection level	IP53

Rail:

appearance	
Measurement	35.8 x 12.5 x 1000 mm
Weight	600g(length1000mm)
material	PVC + copper
Conductive communication	4
working temperature	0~45℃
Working humidity	≤70%RH
Storage temperature	-20~60℃
Protection level	IP53

5. Troubleshooting

No.	Fault phenomenon	Possible causes	Solutions
1	The indicator does not light up after power on	Poor contact of main engine plug	Plug in the host again
		The power adapter is damaged	Replace the adapter
2	Communication indicator light on red light	The Communication Module is not connected to the base station	Ensure that the base station is installed within the effective communication distance
3	The working indicator light on the Smart Shelf Counter is red	The Smart Shelf Counter is not connected to the Communication Module	Try to plug the communication or Smart Shelf Counter again
4	The working indicator light on the Smart Shelf Counter or Communication Module flashes green for a long time	The sensor is not aligned with the center of the reflector	Readjust the position of the main engine and the height of the guide rail
		Communication Module or Smart Shelf Counter is damaged	Replace the communication or Smart Shelf Counter
5	There is a big difference between the quantity of goods displayed by the software and the actual quantity	Communication Module or Smart Shelf Counter is damaged	Replace the communication or Smart Shelf Counter
6	After increasing or decreasing the items, the number of products displayed by the software does not change	Communication Module or Smart Shelf Counter is damaged	Power on again to confirm or replace the host
		Reflector not installed	Re install the reflector
		Product bar code and host Sn number binding error	Rebind the SN number of product and host

6. Notes

1. Due to the change of product model or parts, the content of the instruction manual may not be in conformity with the real object. Please refer to the actual product.

2. Before installing the rail, the plug must be installed first to avoid scratching the installation personnel at both ends of the rail.

3. Do not disassemble or modify this product by yourself.

4. Electromagnetic interference should be avoided during product installation and use.

5. Keep the product clean and prevent water, dust and corrosive liquid from entering the machine.

6. The product must work within the specified temperature and humidity range. Once the specified temperature and humidity is exceeded, the product will be damaged.

7. It is forbidden to use this product in harsh environment such as high temperature, high humidity, strong magnetism, strong radiation and chemical corrosion.

FCC Statement

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

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.

Note: 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.