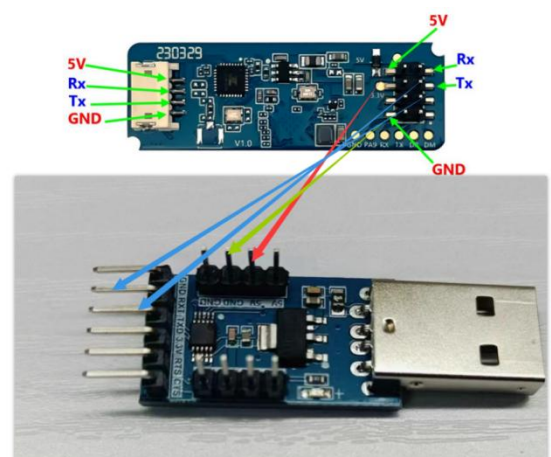# HLK-LD2450 User Guide

Content

1. Wire connection

1.1 Pin introduction

1.2 Wire connection tutorial

Pin->Corresponding wiring	
2450 pin	CH340 (serial port board)
5V	5V
GND	GND
TX	RX
RX	TX
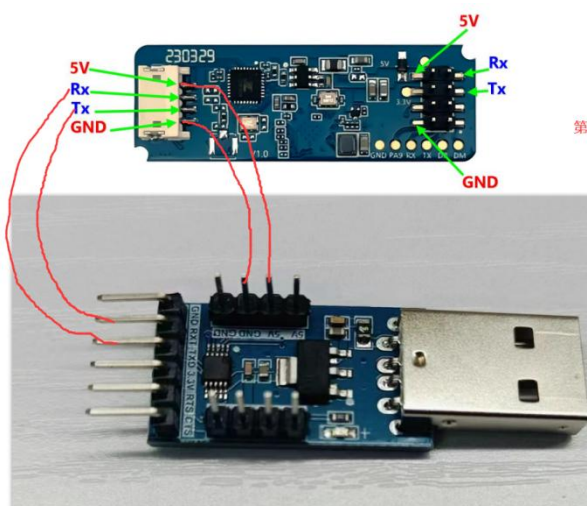
2. Test whether the module is working properly

2.1 Install the driver file

(1) Open the driver file and click Install. After the installation is complete, the message Driver Installation Completed will be displayed.
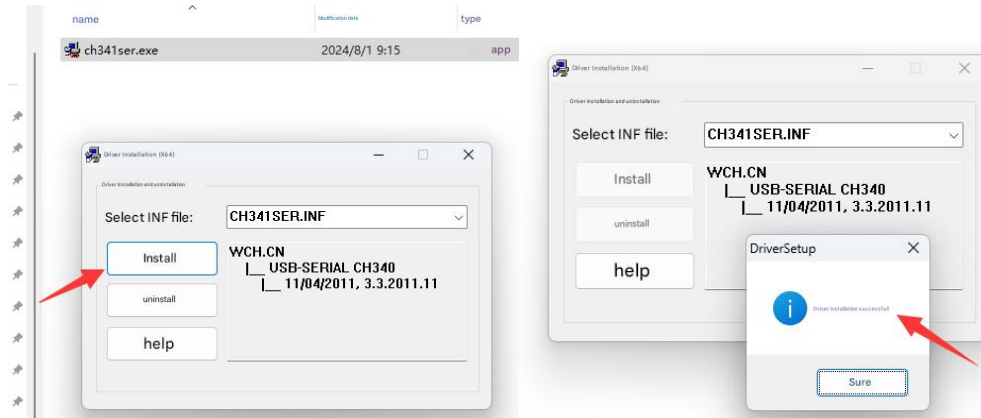
(2) After installing the driver, connect the cable and you can see the device management port as shown in the figure below.

2.2 View serial port data

At this time, open the serial port assistant tool, select the corresponding serial port, the baud rate defaults to 256000, and there will be output data when the serial port is opened. Note that the frame header and fra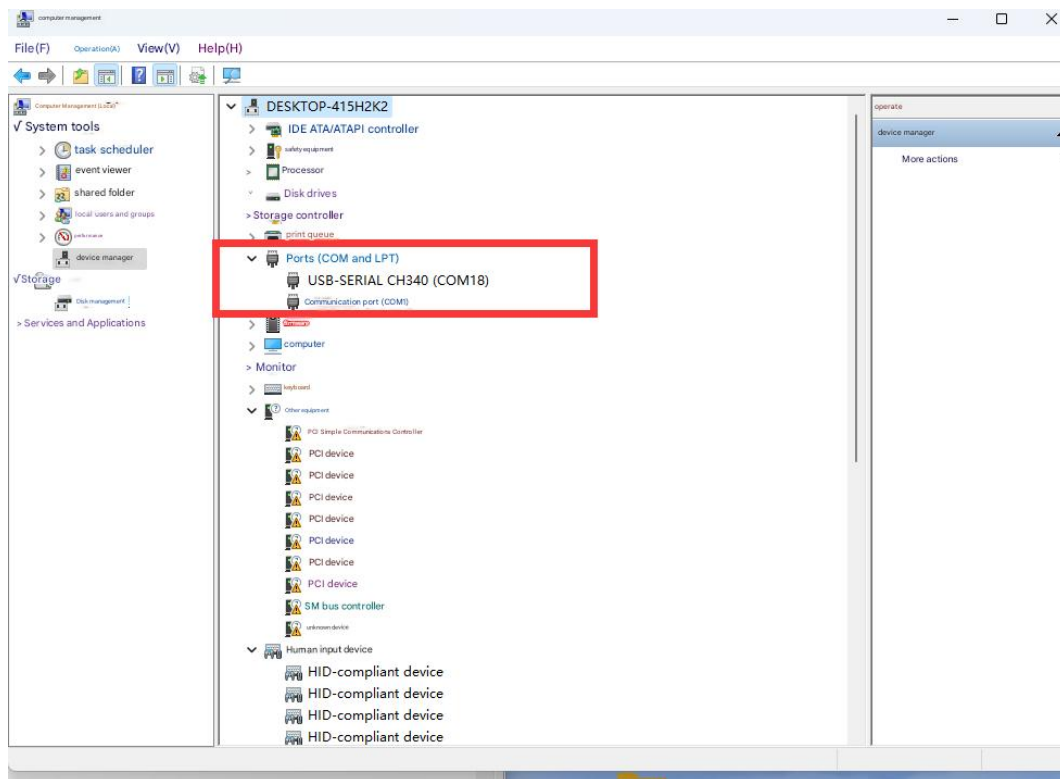me tail of the output data correspond accurately. If the output data is not like this, you can change other baud rates to view it.
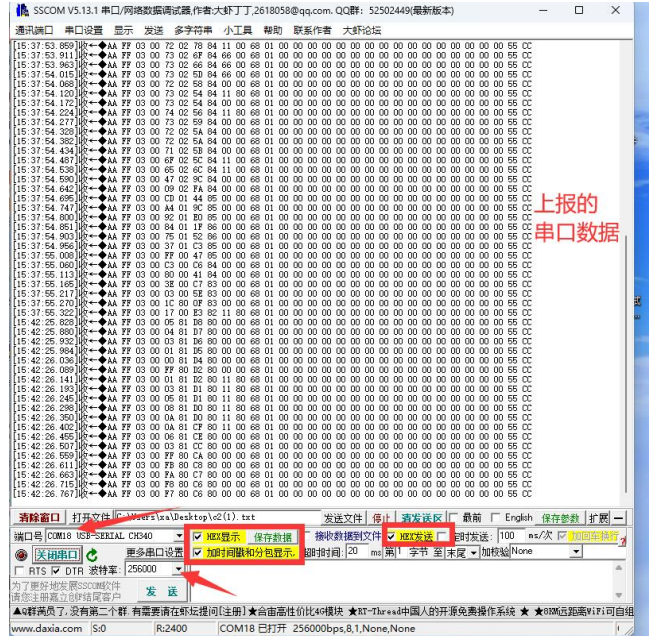
2.3 Test whether the data sent back is normal

Send the enable configuration command (FD FC FB FA 04 00 FF 00 01 00 04 03 02 01) to check whether there is a response. Normally, data reporting stops after the enable configuration command is replied.
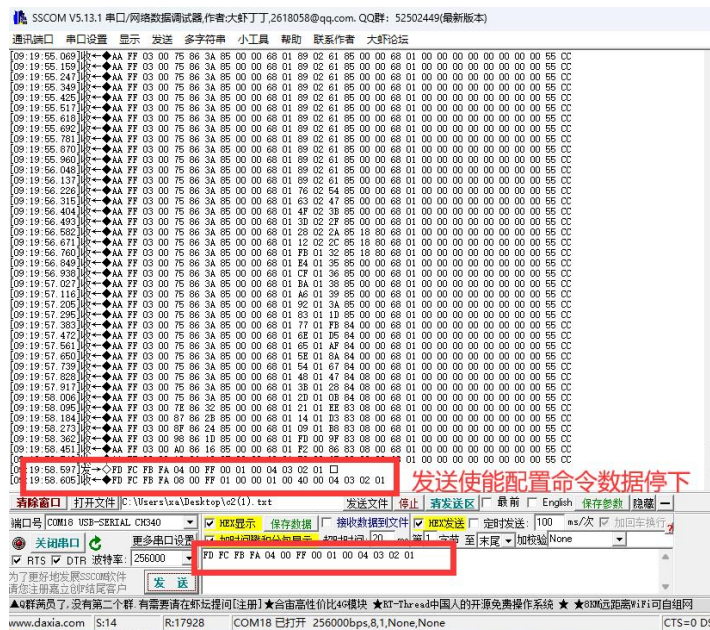
3. Simple test

3.1 Using host computer

(1) Start detecting the device. After the device is detected, start the detection.

（2）
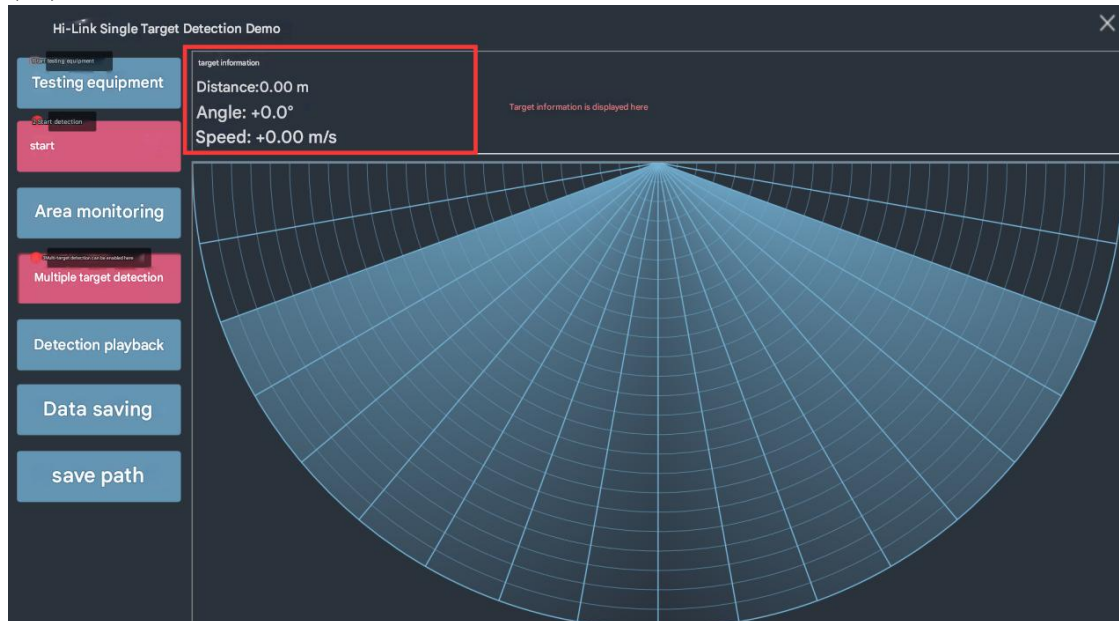
(2) Single target detection.
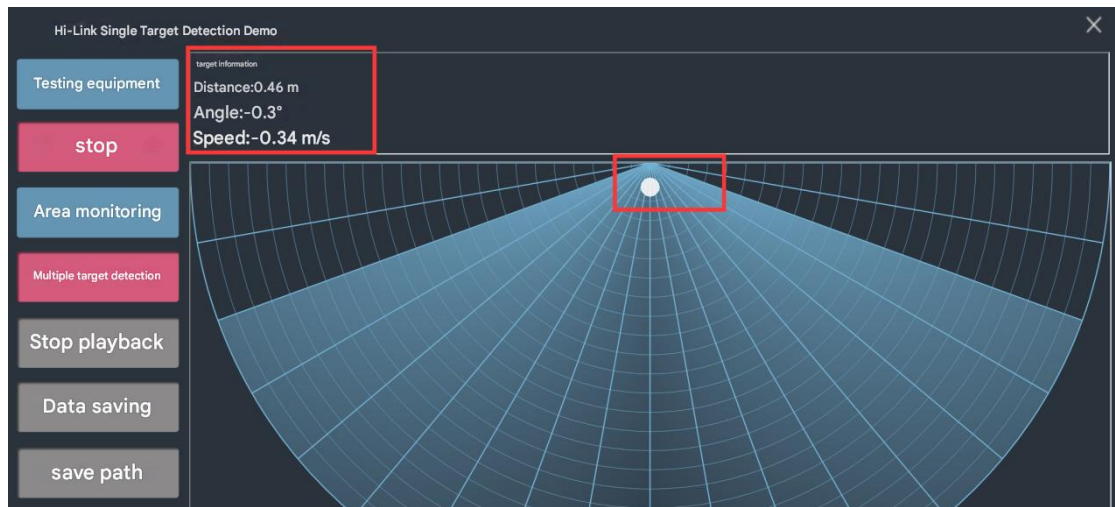
(3) Multi-target detection
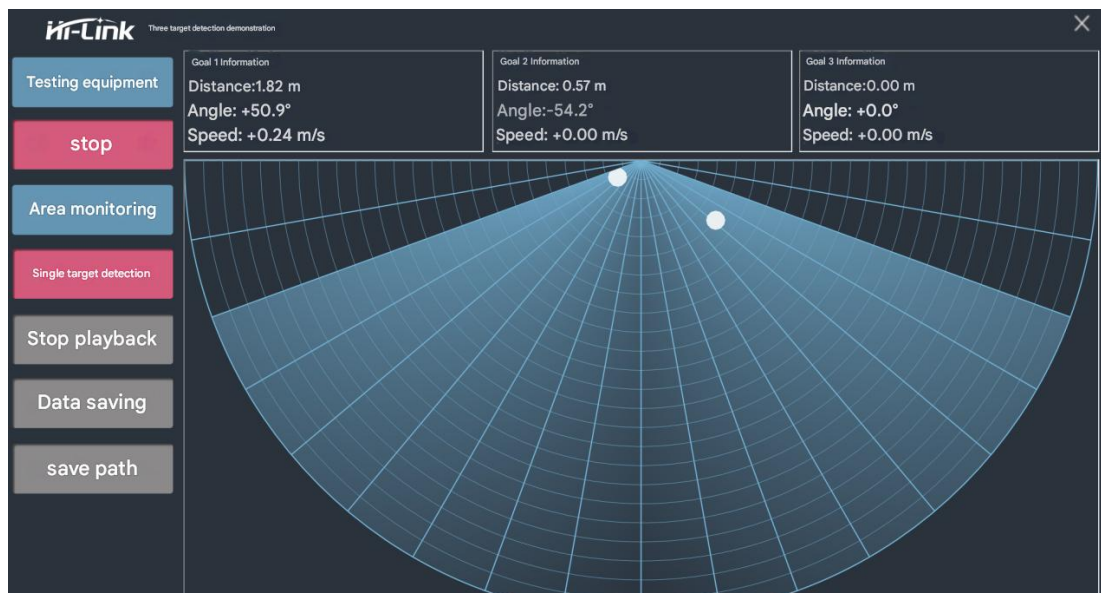
3.2 Using Mobile App

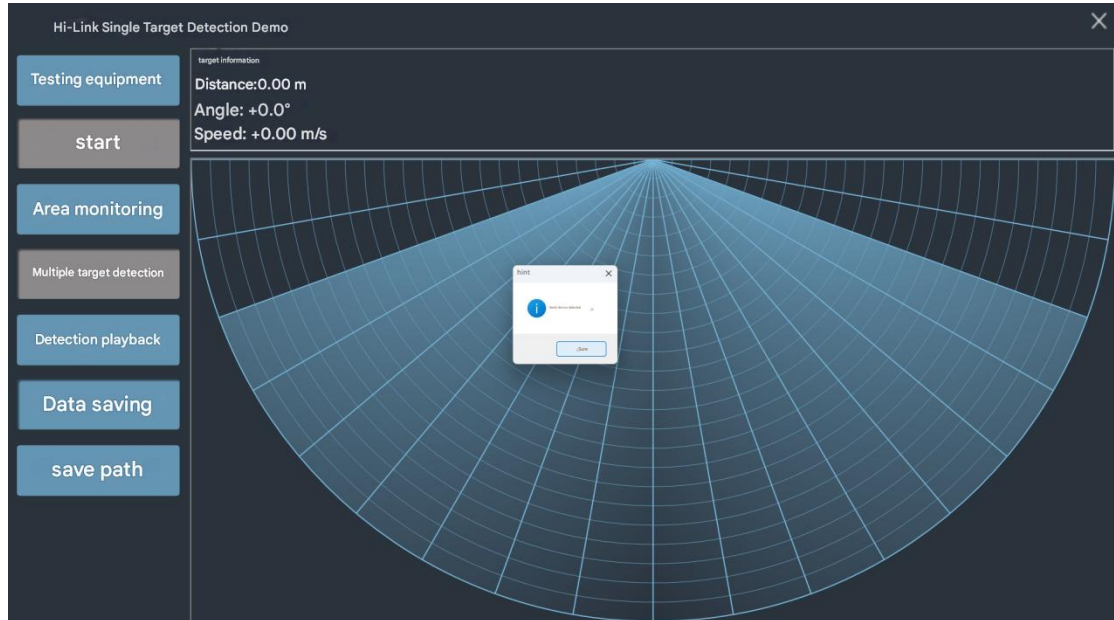(1) 2450 app download address.

https://www.hlktech.com/Mobile/App/12.html

(2) After downloading the app, you can search for the device. After connecting, you can see the parameter setting page and its detection page. If you cannot enter the following pages, you can update the app to the latest version and then upgrade the 2450 to the latest firmware.
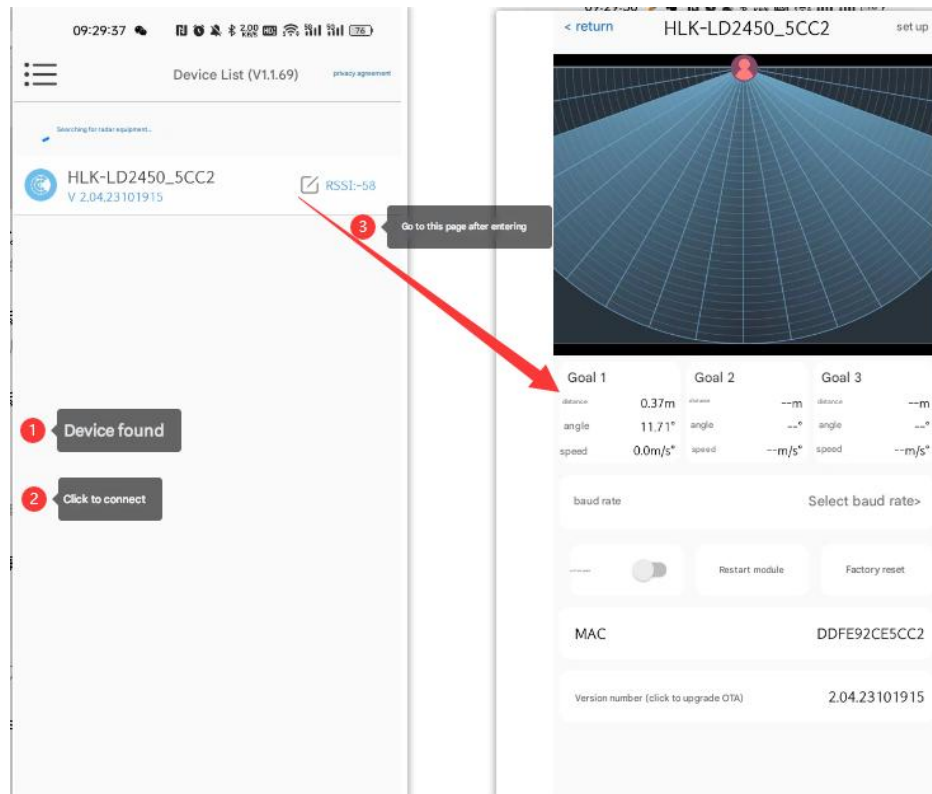
(3) Baud rate modification: You can modify the baud rate on this page. If your device does not support the default baud rate, you can modify the baud rate here. After modifying the baud rate, restart the module.
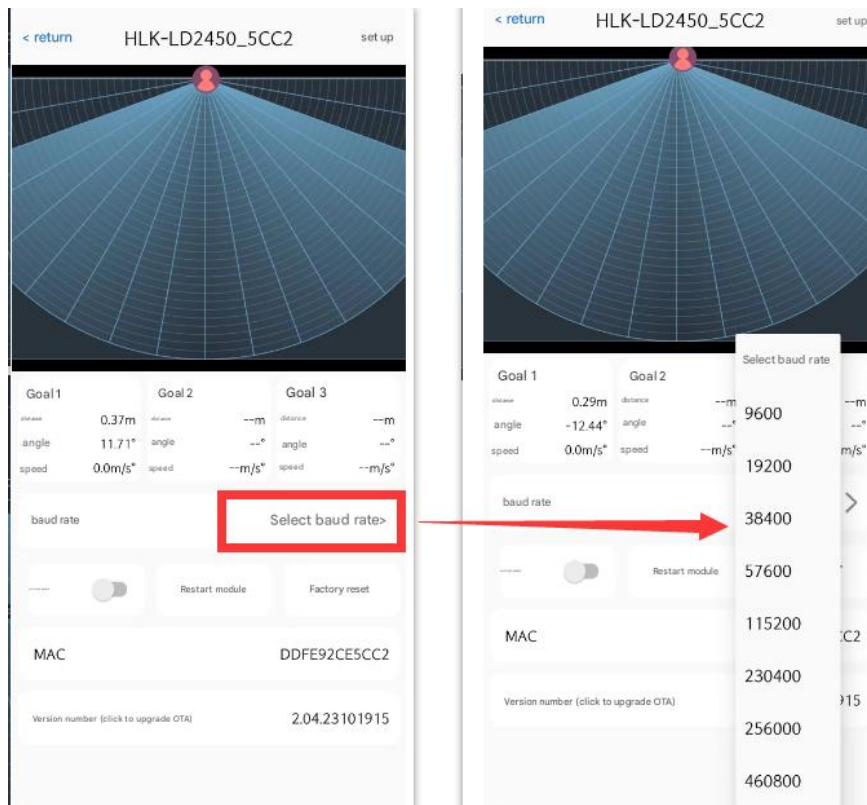
(4) Turn on the multi-person detection function. After turning on multi-person detection, up to three targets can be detected.
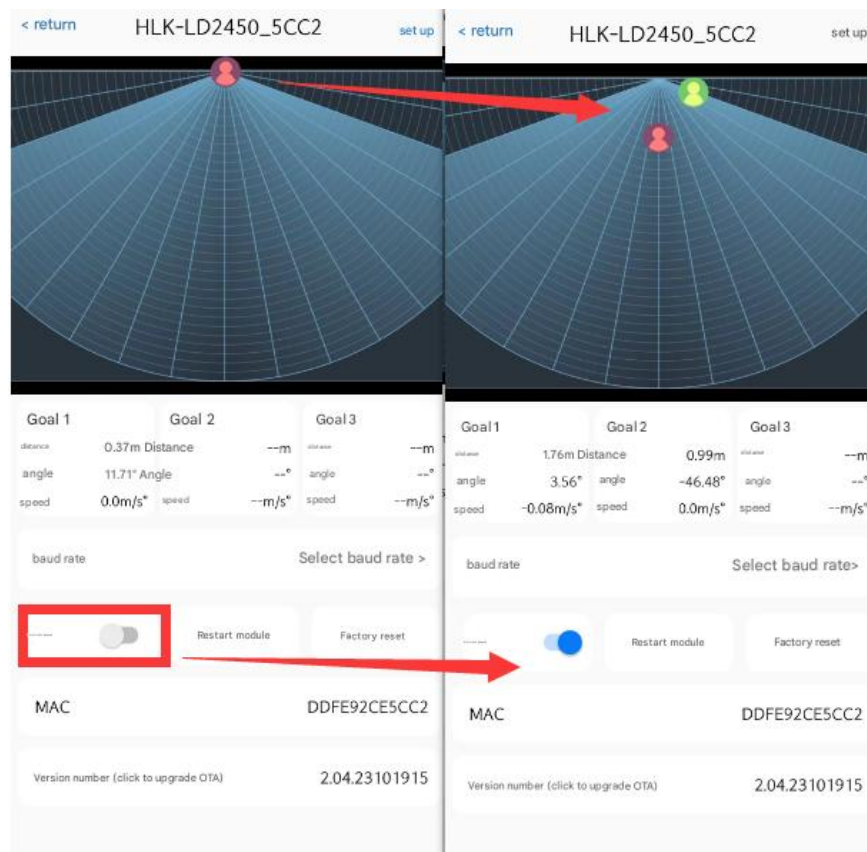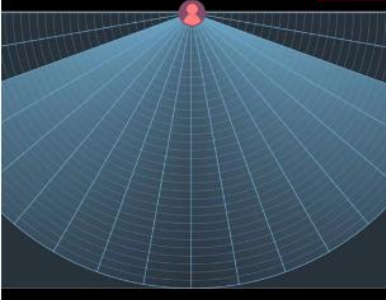
(5) OTA upgrade function. You can upgrade to the previous old version or to the subsequent new version.
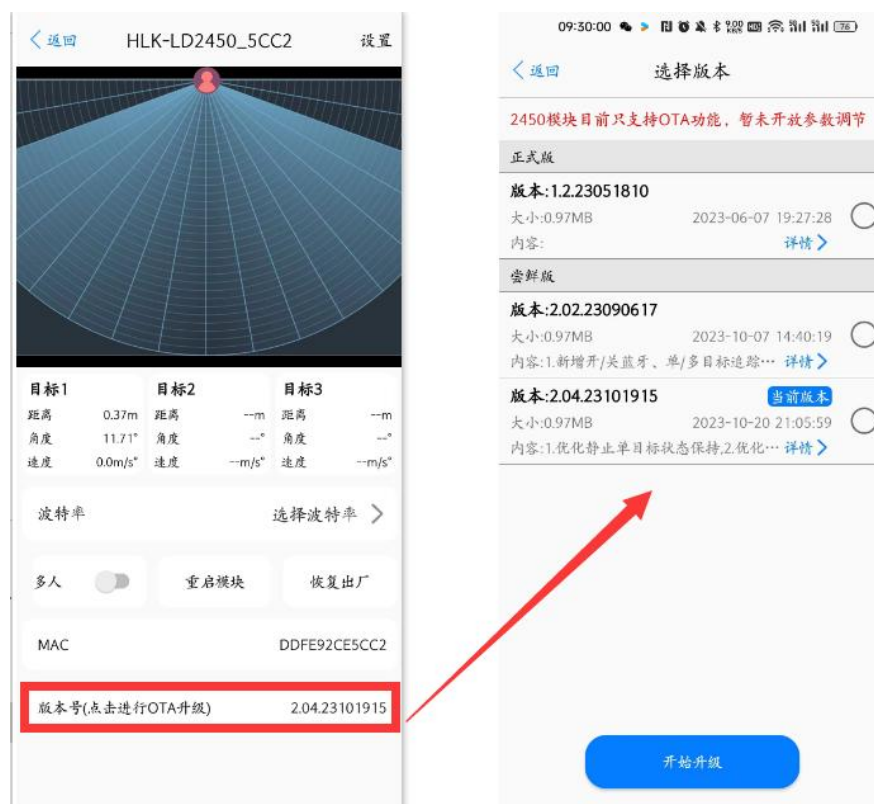
（6）Area detection and area filtering functions: The area detection function only detects targets in the set area and does not detect other areas. The area filtering function filters out targets in the set area and does not detect other areas. It should be noted that the area detection and area filtering functions cannot be set to take effect at the same time.

The area detection and area filtering functions can be set separately. Please

note that these two functions cannot be set to take effect at the same time.

4. Frequently asked questions

4.1 Failed to open the serial port device?
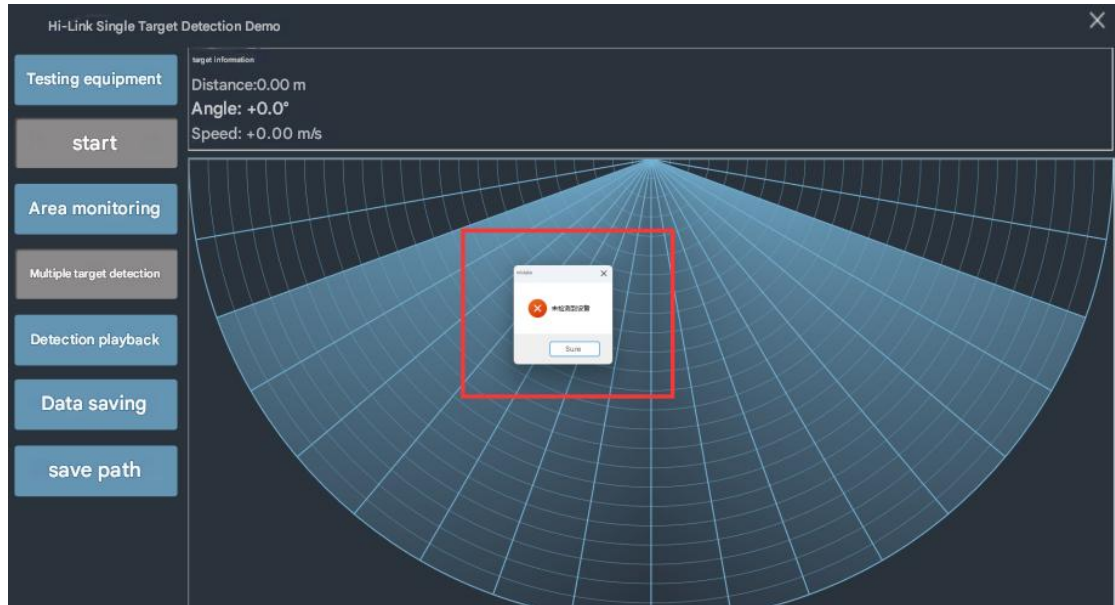
Solution:

Check whether the driver is installed and whether the serial port is occupied by other software.

Check whether the wiring is wrong and whether TX and RX are reversed.

Check whether the baud rate is 256000. The host computer currently only supports a baud rate of 256000. If the baud rate has been changed, you can change it back to 256000 and test again.

4.2 Why is there no parameter setting page when using the software, and it shows that only the OTA function is supported?

Solution:

The old version only supports OTA function using mobile app. Parameter setting is a function of subsequent upgrades. You can OTA upgrade to the latest firmware and then test it (the latest firmware is version 2.04.23101915).

4.3 Why is this data always 68 01?

answer:

This is the distance resolution, which indicates the size of a single distance gate. It is similar to accuracy and is fixed. In practical applications, this parameter is not required. You only need to parse the X, Y coordinate data and speed.

4.4 What is the purpose of the 2450 antenna? Can it be left unconnected?

answer:

The antenna of 2450 is a Bluetooth antenna. When adjusting parameters using the app, you need to connect to Bluetooth. The signal is unstable when the antenna is not connected. Basically, you can only connect it nearby. If there is a certain distance, you must connect the antenna.

4.5 How to turn Bluetooth on or off?

Solution: Send the following commands in sequence to turn Bluetooth on or off.
(1) Turn on Bluetooth
1. Enable configuration: FD FC FB FA 04 00 FF 00 01 00 04 03 02 01
2. Turn off Bluetooth: FD FC FB FA 04 00 A4 00 00 00 04 03 02 01
3. Restart module: FD FC FB FA 02 00 A3 00 04 03 02 01
(2) Turn off Bluetooth
1. Enable configuration: FD FC FB FA 04 00 FF 00 01 00 04 03 02 01
2. Turn off Bluetooth: FD FC FB FA 04 00 A4 00 0 1 00 04 03 02 01
3. Restart module: FD FC FB FA 02 00 A3 00 04 03 02 01

5. Module test installation

The module needs to be installed in this direction. For the specific installation height, please refer to the 2450 specification. For some precautions, please refer to the specification in detail.

[HLK-LD2450-24G - Download - Hailingke Electronics (hlktech.com)](hlktech.com)
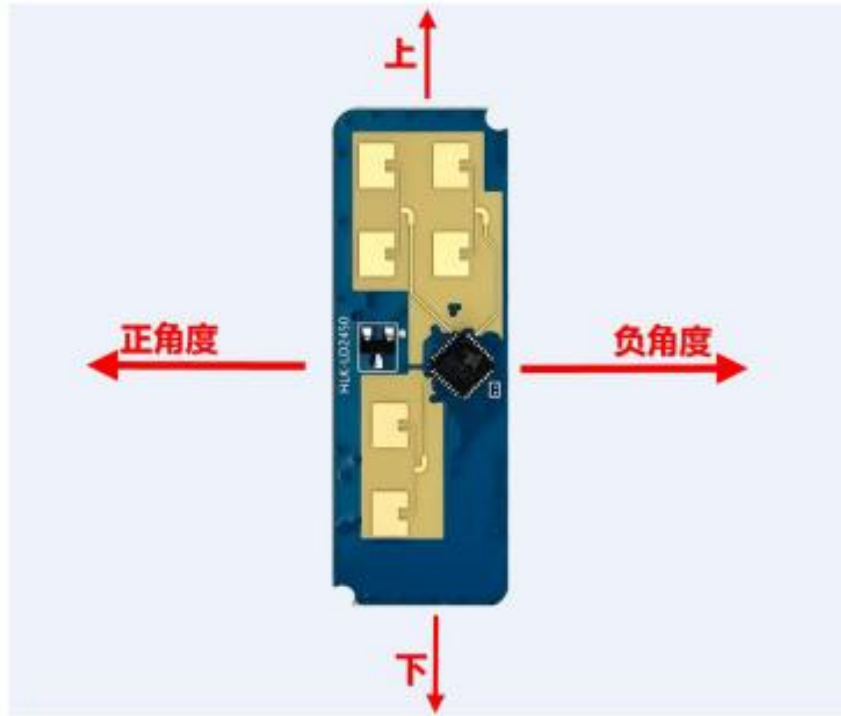
6. 2450 coordinate calculation method

<mark>Note: The data is low first, high last</mark>

X, Y coordinate calculation method: When X is a positive coordinate, the calculation method is X-2^15

When X is a negative coordinate, the calculation method is 0-X

Y is always a positive coordinate, calculated as Y-2^15

Here is an example of the data obtained:

[14:58:46.556]收←◆AA FF 03 00 10 01 52 83 00 00 68 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 CC

hexadecimal	10	01	52	83	00	00	68	01	
Binary	0001 0000	0 000 0001	0101 0010	1 000 0011	0000 0000	0 000 0000	0110 1000	0000 0001	
Decimal	16	1	82	131	0	0	104	1	
	X, the highest bit is 0 Negative coordinates		Y, the highest bit is 1 Positive coordinates		speed		Distance resolution		
coordinate	16+1*256=272		82+131*256=33618				104+1*256=360mm		
	0-272=-272mm		33618-32768=850mm						
Target	(-272, 850)								

[14:58:47.026]Received←◆AA FF 03 00 E4 00 87 83 11 8 0 68 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 CC

hexadecimal	E4	00	87	83	11	80	68	01	
Binary	1110 0100	0 000 0000	1000 0111	1 000 0011	0001 0001	1 000 0000	0110 1000	0000 0001	
Decimal	228	0	135	131	17	128	104	1	
	X, the highest bit is 0 Negative coordinates		Y, the highest bit is 1 Positive coordinates		Speed, the highest bit is 0, positive speed		Distance resolution		
coordinate	228+0*256=228		82+131*256=33671		17+128*256=32785		104+1*256=360mm		
	0-228=-228mm		33671-32768=903mm		32785-32768=17 cm/s				

[14:42:45.426]收←◆AA FF 03 00 BE 8A 47 8E 11 00 68 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 CC

hexadecimal	BE	8A	47	8E	11	00	68	01	
Binary	1011 1110	1 000 1010	0100 0111	1 000 1110	0001 0001	0 000 0000	0110 1000	0000 0001	
Decimal	190	138	71	142	17	0	104	1	
	X, the highest bit is 1 Positive coordinates		Y, the highest bit is 1 Positive coordinates		Speed, the highest bit is 0, positive speed		Distance resolution		

coordinate	190+138*256=35518 35518-32768=2750m m	71+142*256=36453 36453-32768=3655 mm	17+0*256=17 0-17=-17 cm/s	104+1*256=360mm	