

LD2450

User Guide

Rev 1.1

2026/9/20

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I Wiring

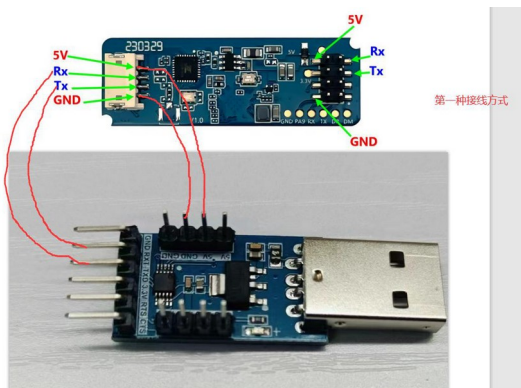
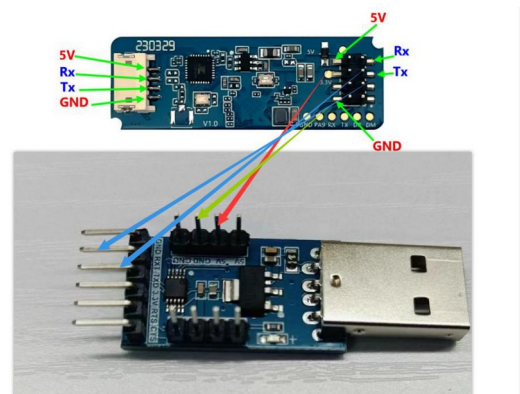
1.1 Pin Description



1.2 Wiring Instructions

The LD2450 module can be connected to a computer through a CH340 USB-to-serial adapter. When wiring, TX and RX must be cross-connected.

LD2450 Pin	CH340 (Serial Adapter)
5V	5V
GND	GND
TX	RX
RX	TX



II Checking Whether the Module Works Properly

2.1 Installing the Driver

FT232 provides VCP and D2XX drivers:

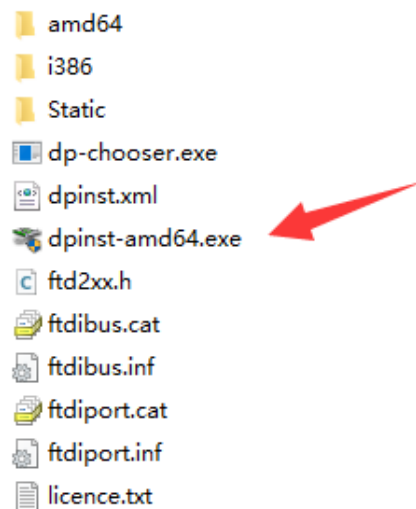
- 1) VCP (Virtual COM Port) driver: The PC recognizes the device as a serial port and communicates using the serial protocol.
- 2) D2XX driver: On the PC, the device is recognized as a USB port, and API functions are required for operation.

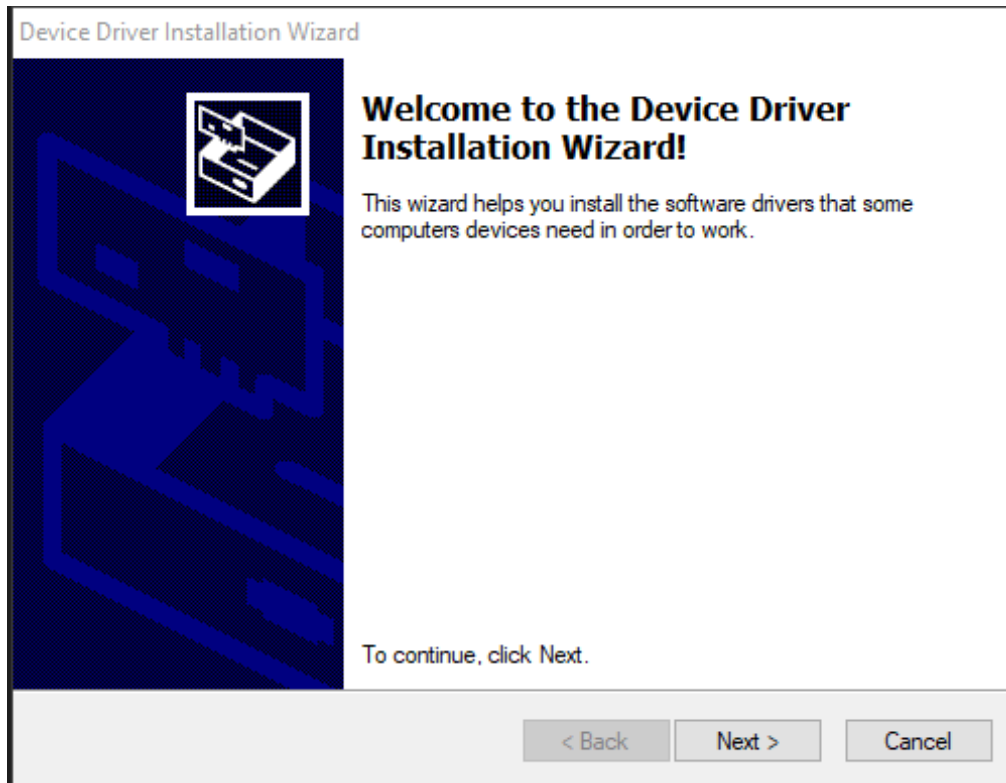
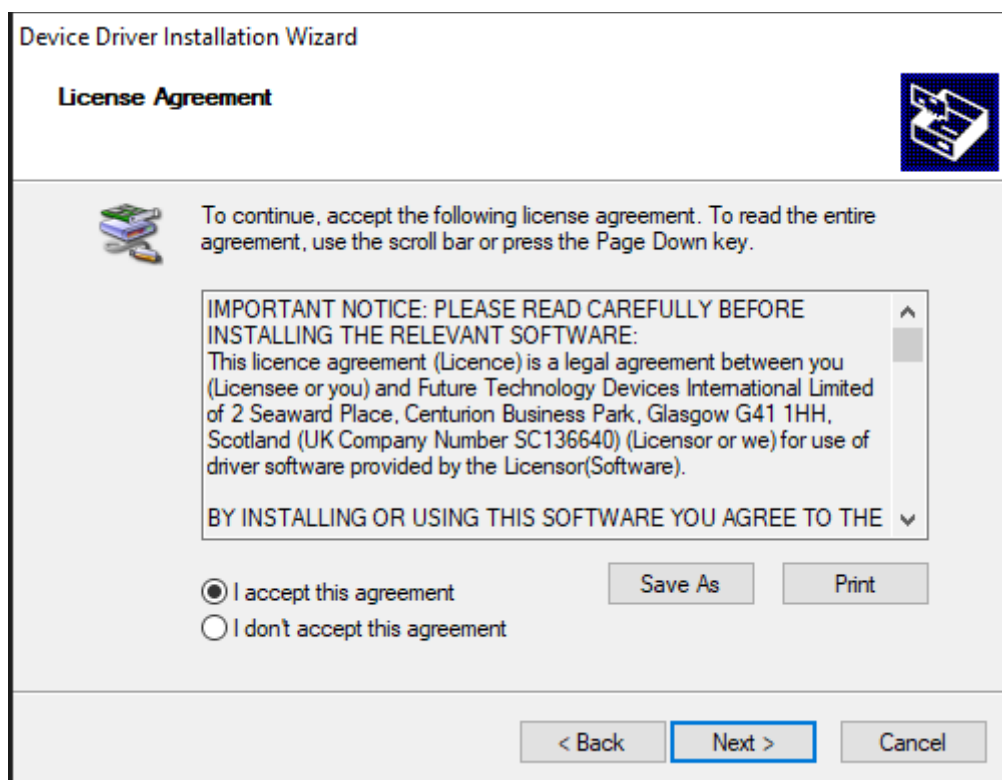
This product provides a VCP example, so only VCP driver installation is covered below. Windows 10 64-bit is used as an example to illustrate the driver installation procedure:

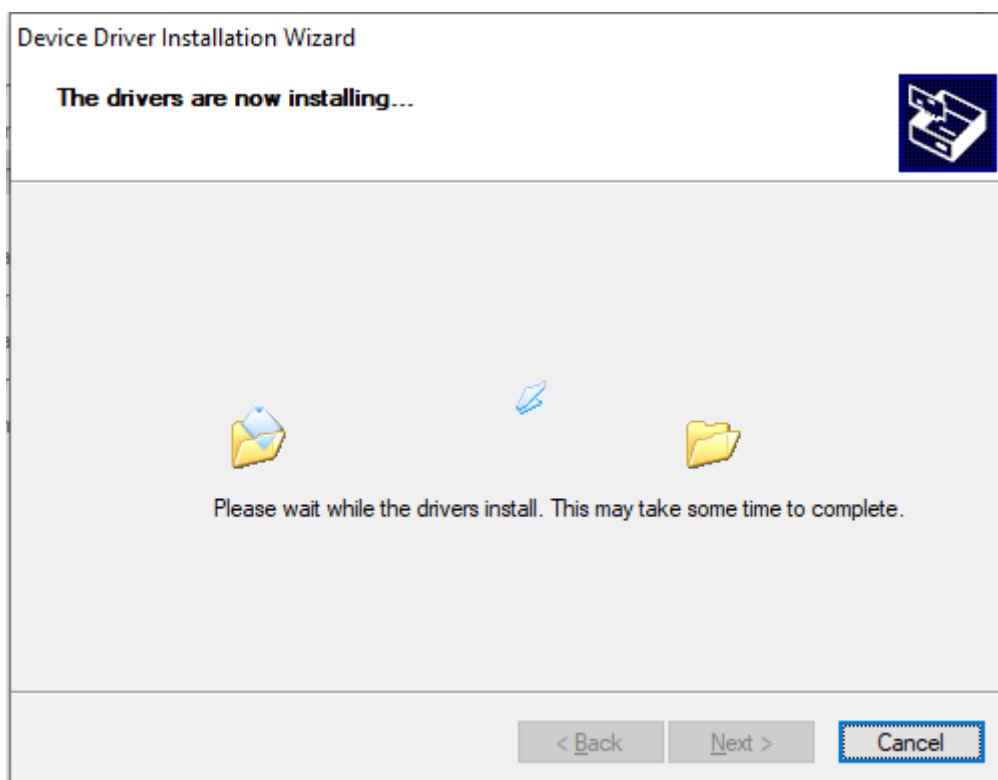
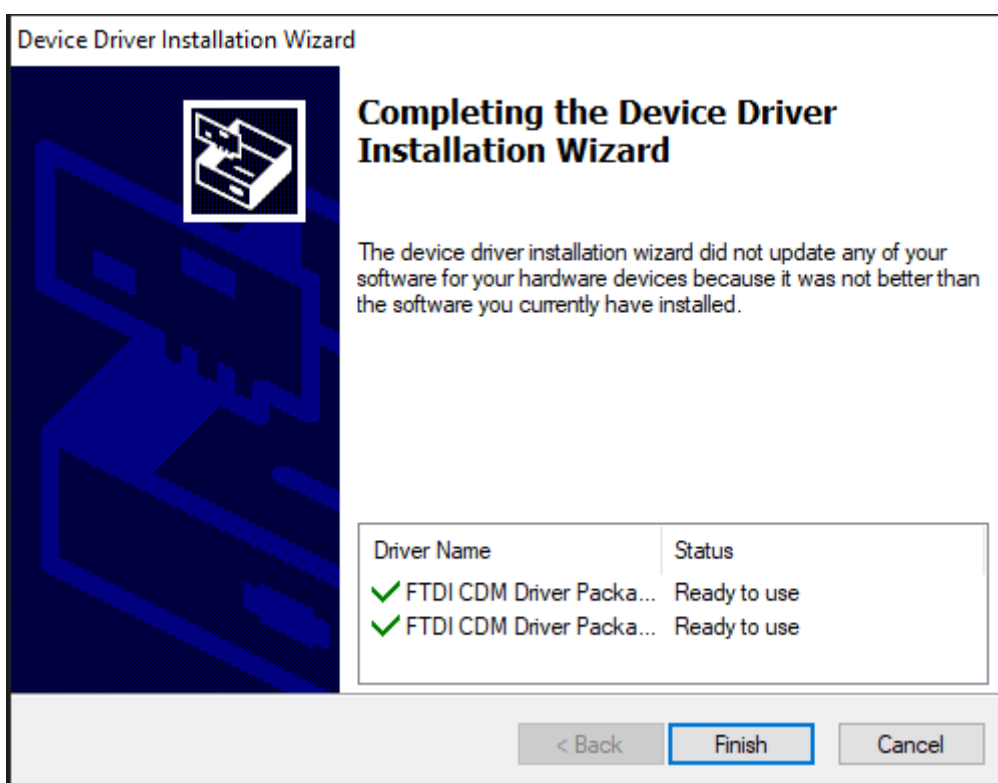
Driver download: FT232_Driver_win64

Users can also visit <https://ftdichip.com/drivers/vcp-drivers/> to download and install the driver.

The driver installation steps are shown below:

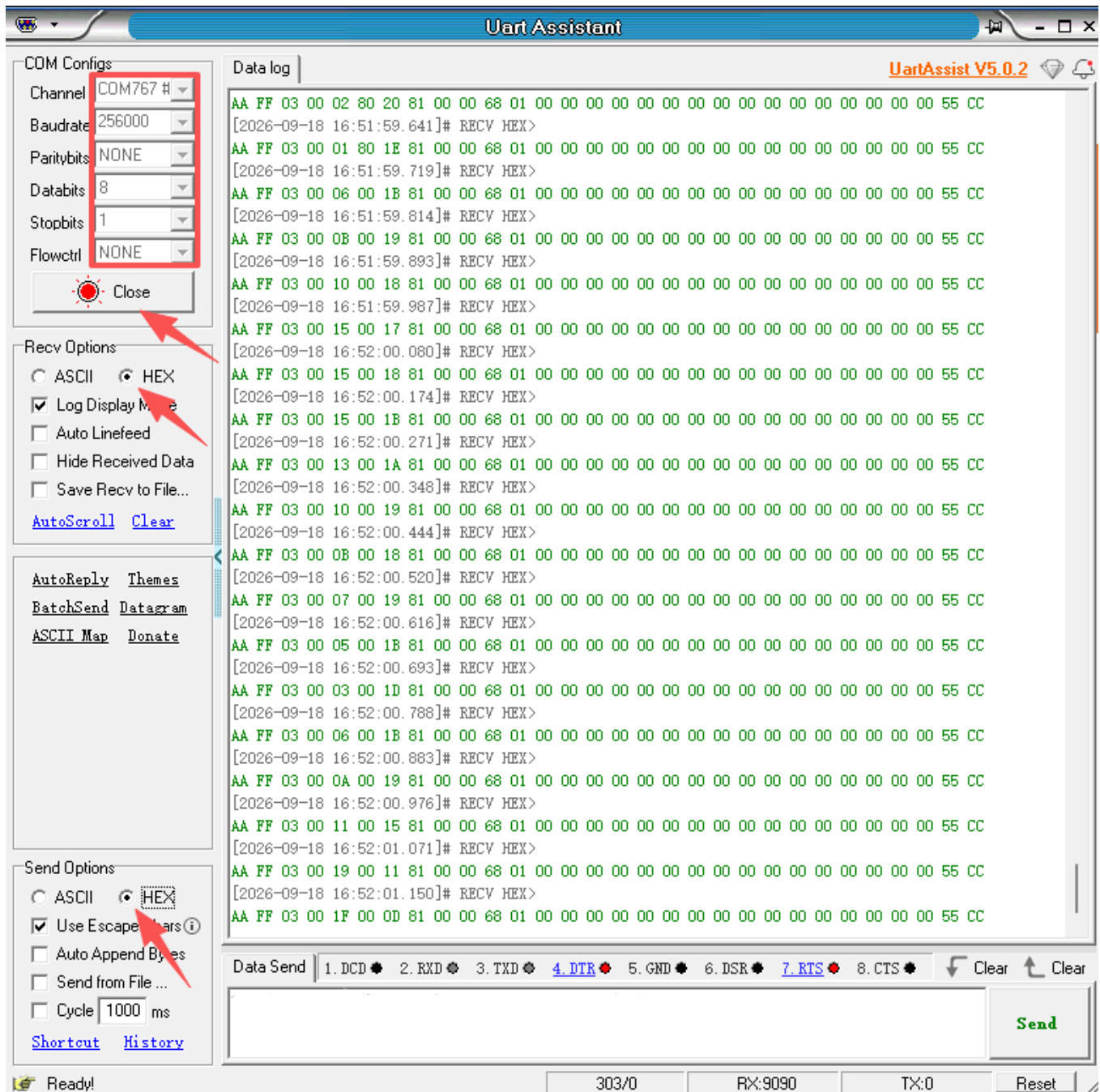






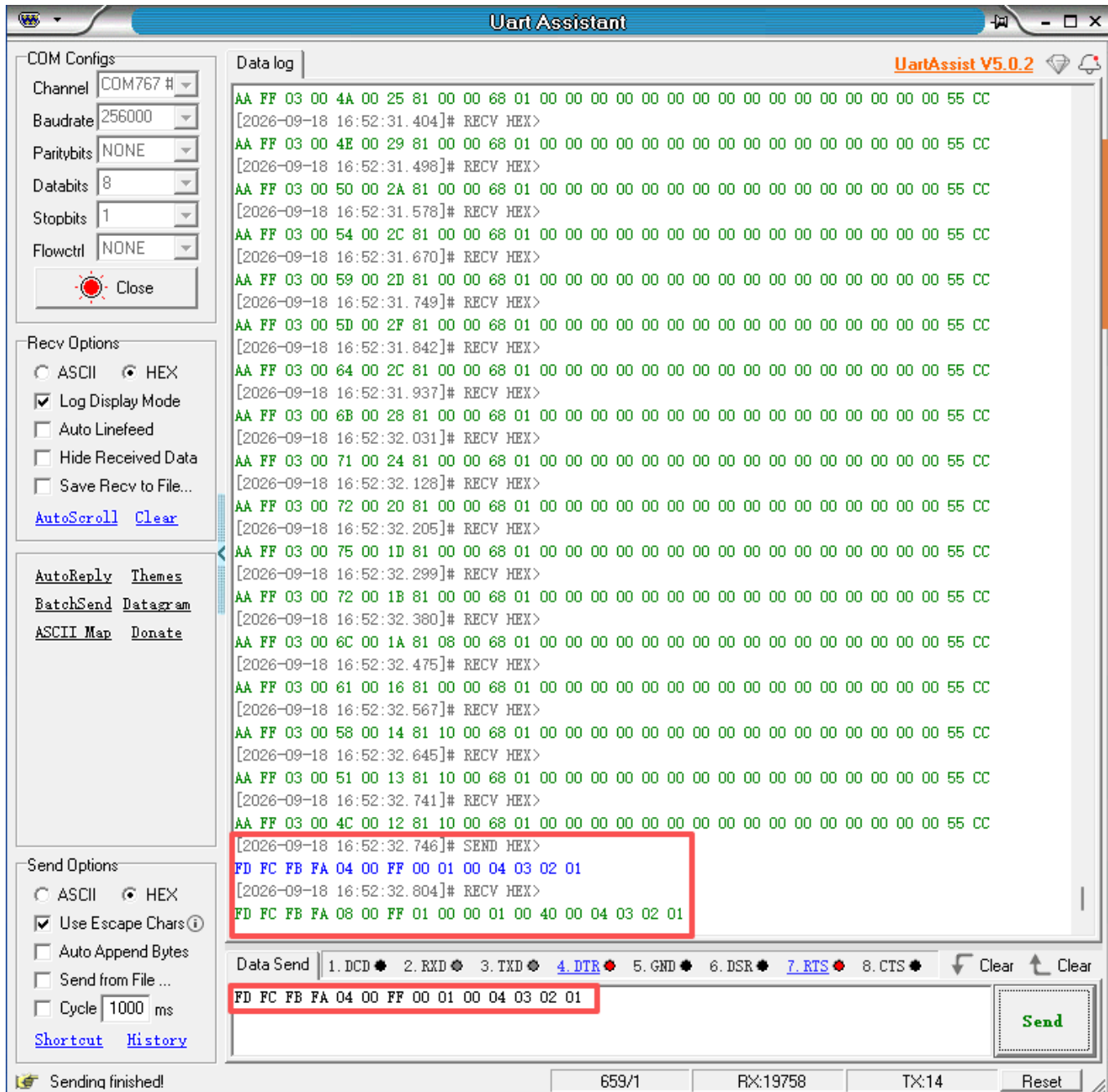
2.2 Viewing Serial Port Data

Open the serial port assistant and select the corresponding serial port. The default baud rate is 256000. After opening the serial port, data should be received continuously. Confirm that the frame header and frame tail of the output data are correct; if the output format is incorrect, try another baud rate.



2.3 Testing Whether Command Responses Are Normal

Send the enable-configuration command (FD FC FB FA 04 00 FF 00 01 00 04 03 02 01) and check whether the module replies. Under normal conditions, after the module replies to the enable-configuration command, detection data reporting will stop.

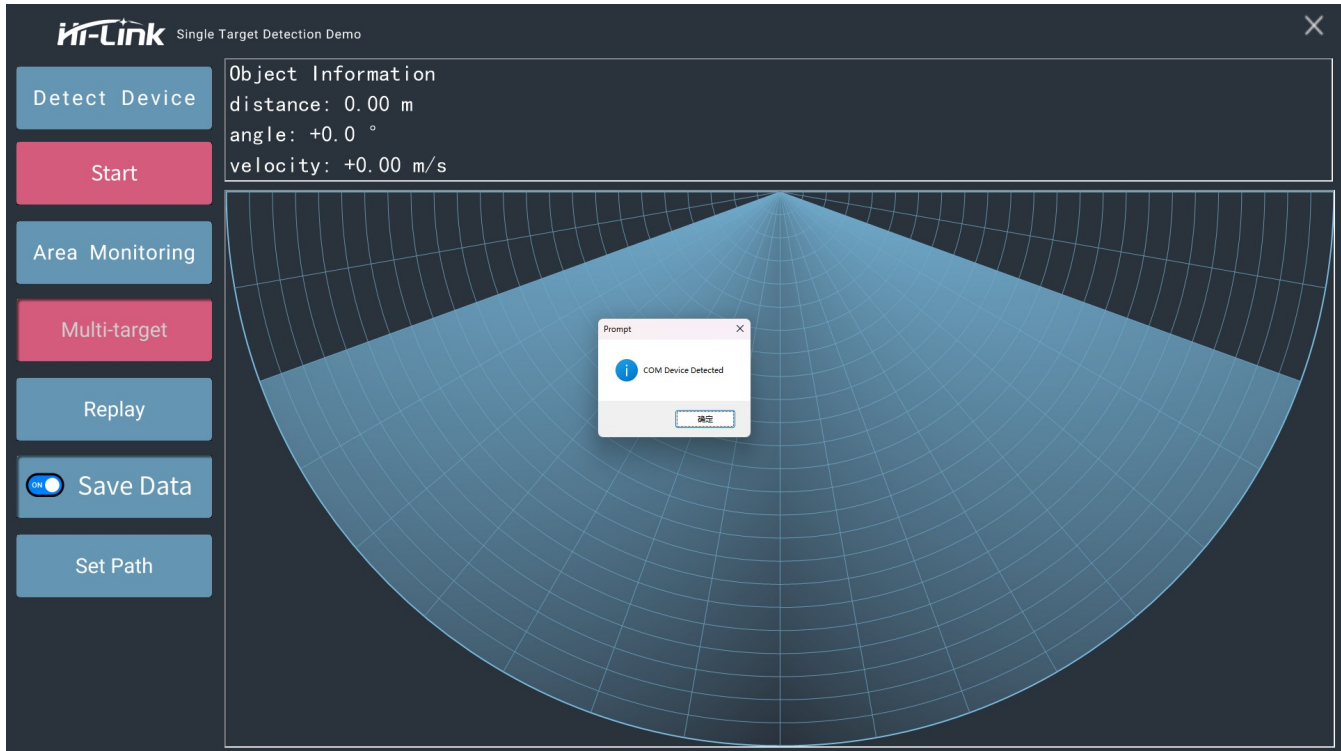
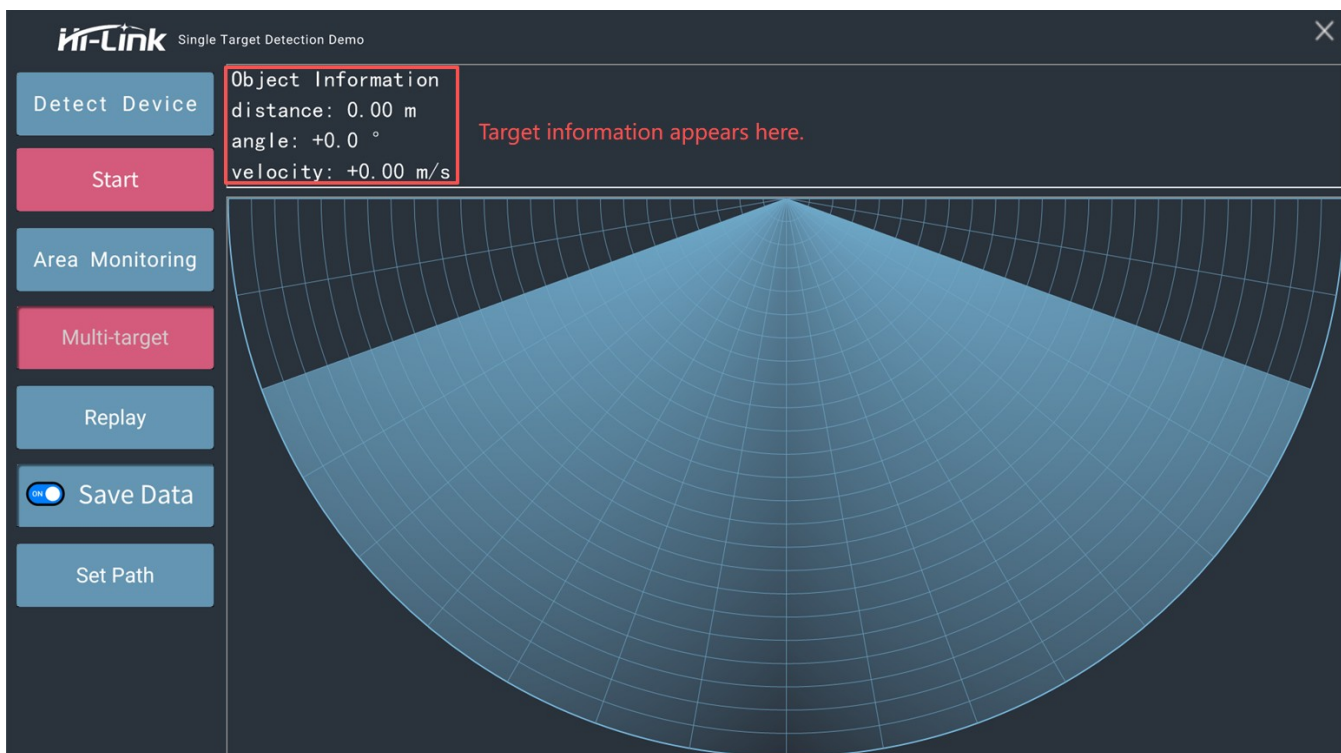


III Basic Test

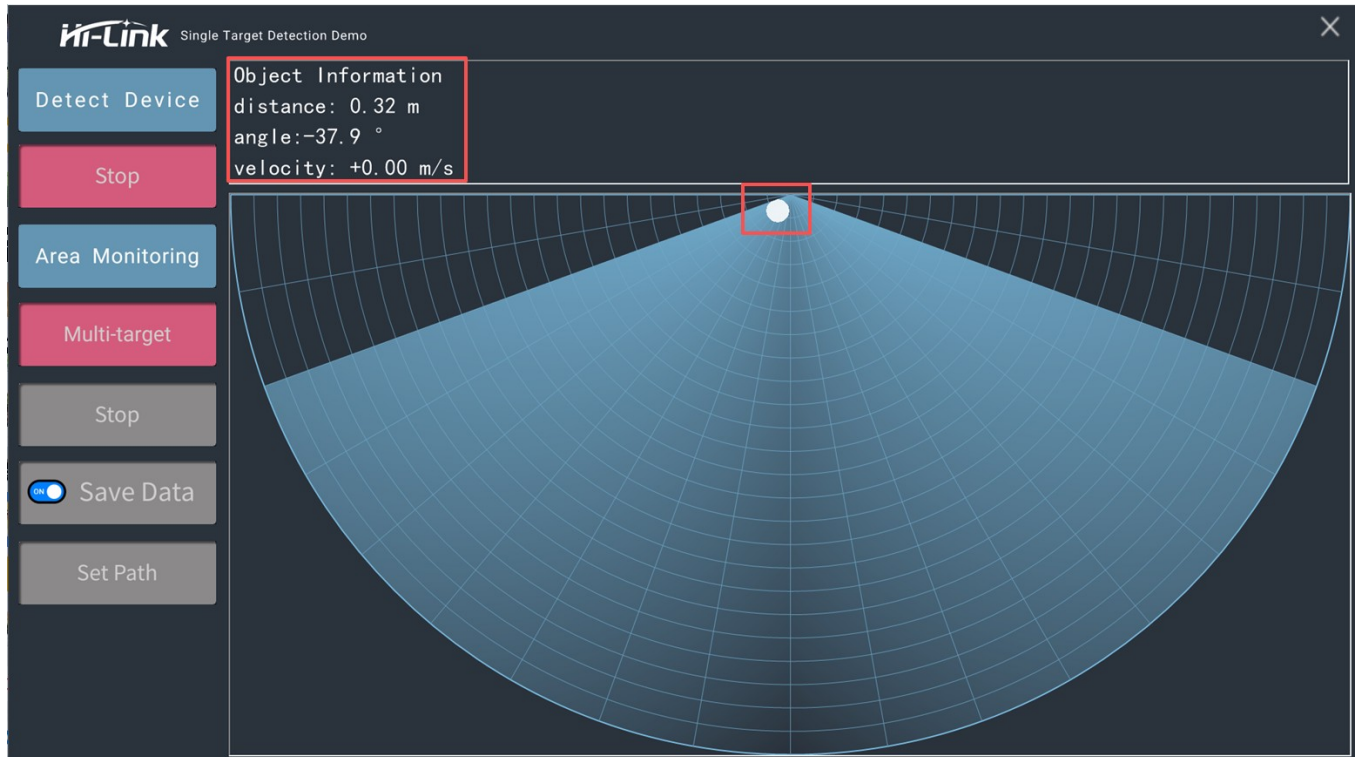
3.1 PC Software Operation

1) Start Device Detection

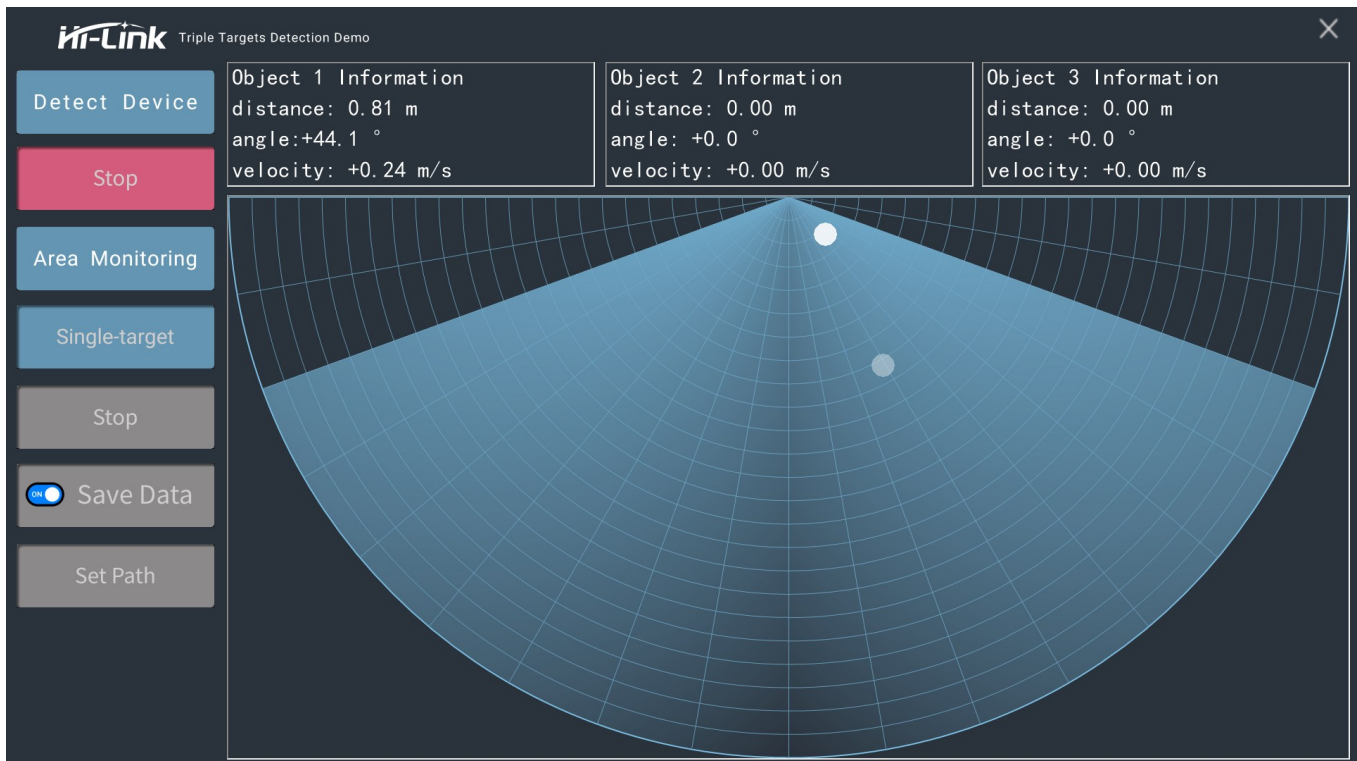
Click "Detect Device". After the device is detected, click "Start" to begin detection.



2) Single-target Detection



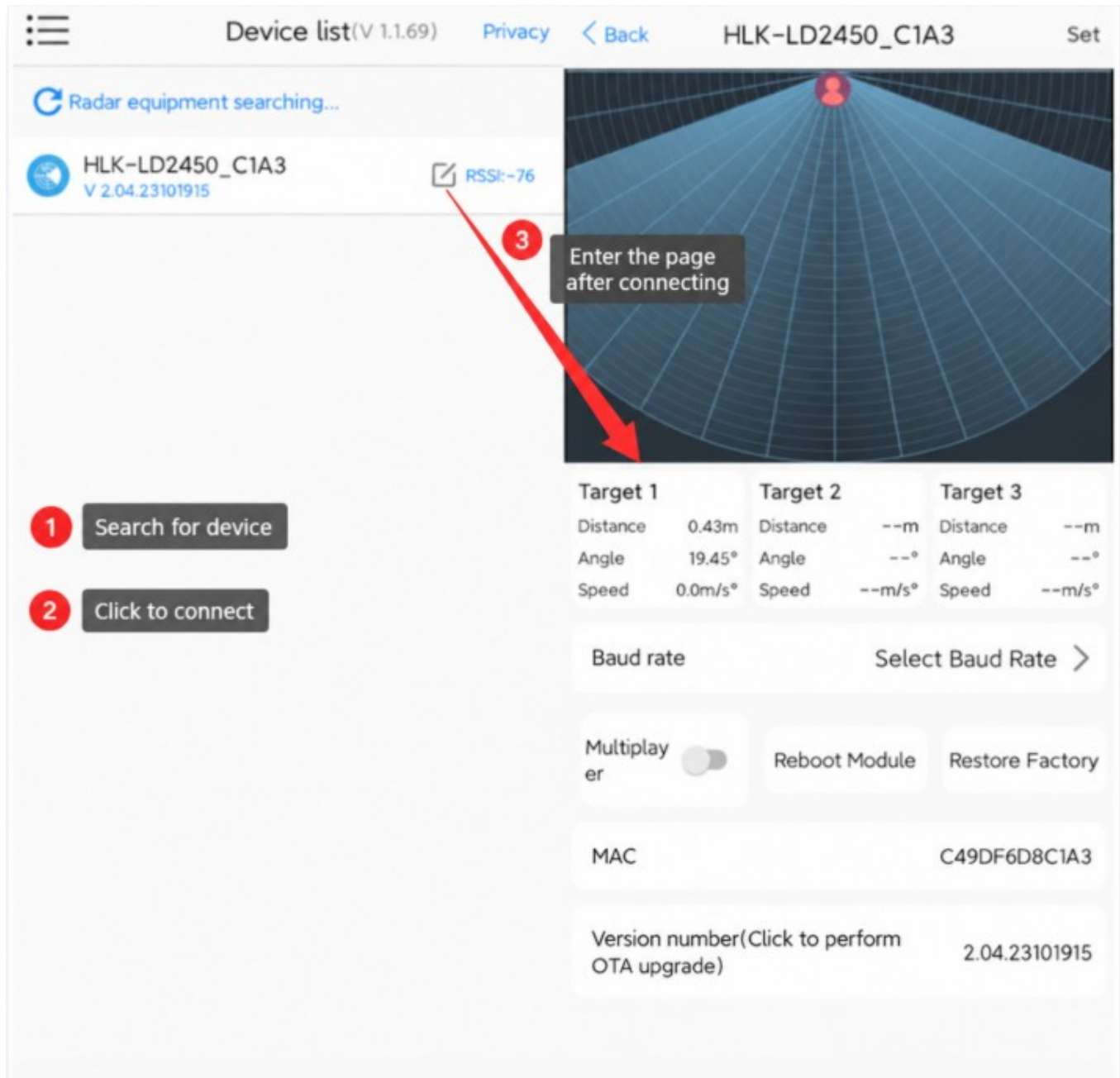
3) Multi-target Detection



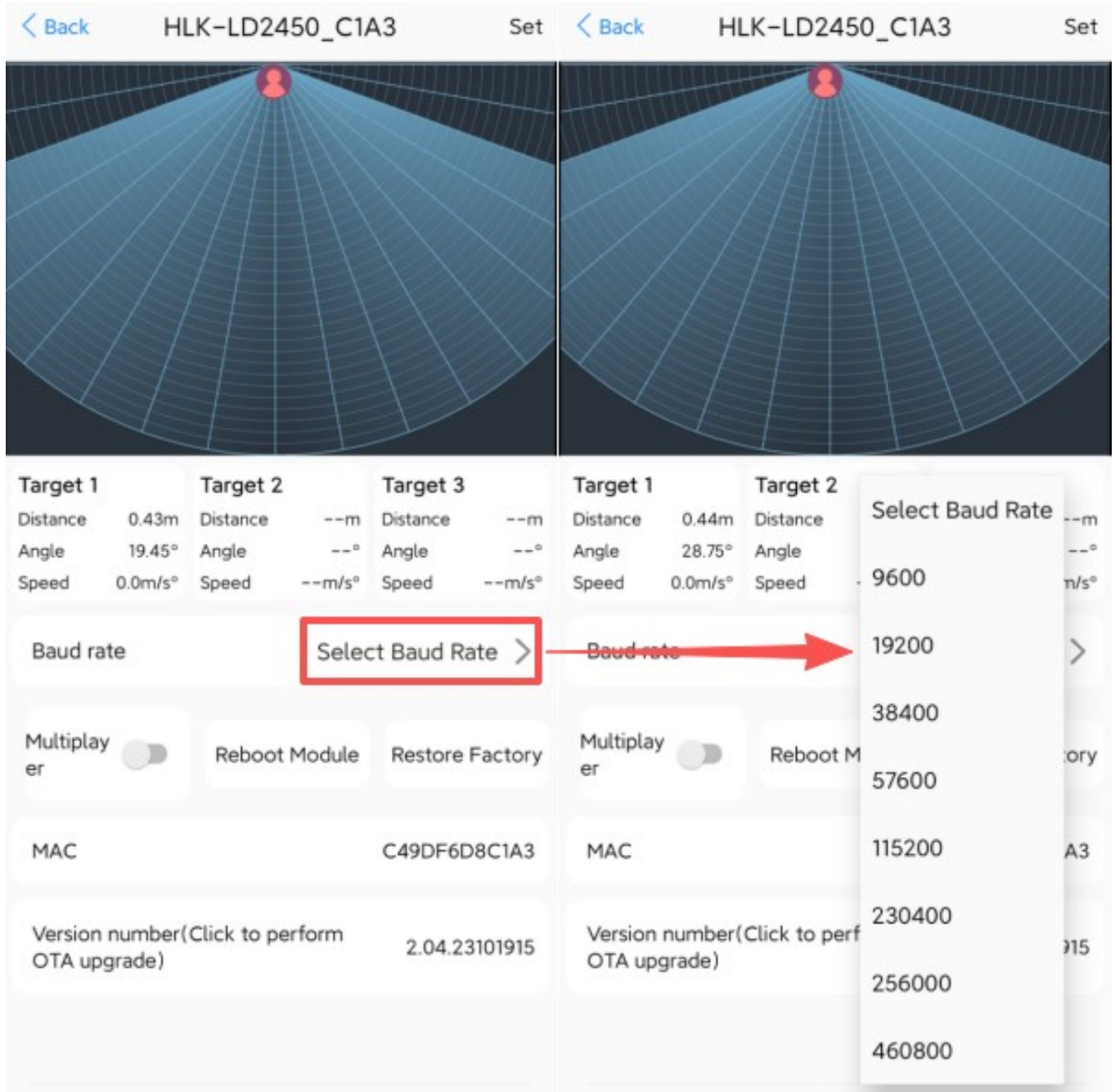
3.2 Mobile App Operation

(1) App download address: <https://www.hlktech.com/Mobile/App/12.html>

(2) After downloading the App, search for the device. After connecting, you can enter the parameter settings page and detection page. If you cannot access these pages, update the App to the latest version and upgrade the LD2450 to the latest firmware.

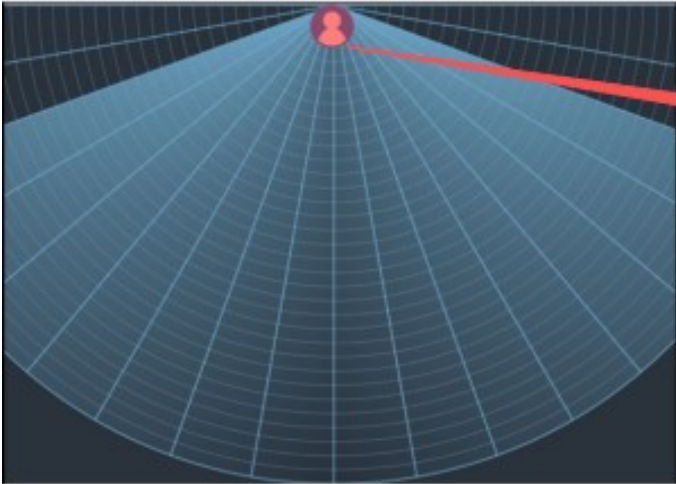


(3) Baud Rate: The baud rate can be changed on the parameter page. If the user device does not support the default baud rate, select another baud rate; restart the module after changing it.

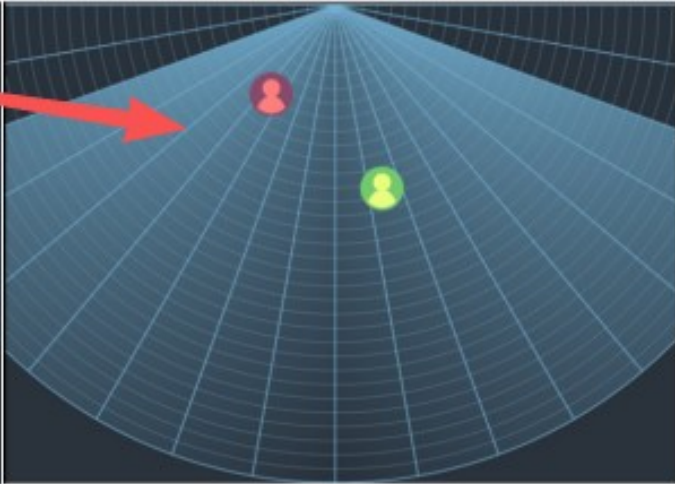


(4) Enable Multi-target Detection: When enabled, up to three targets can be detected.

< Back
HLK-LD2450_C1A3
Set



< Back
HLK-LD2450_C1A3
Set



Target 1		Target 2		Target 3	
Distance	0.43m	Distance	--m	Distance	--m
Angle	19.45°	Angle	--°	Angle	--°
Speed	0.0m/s°	Speed	--m/s°	Speed	--m/s°

Target 1		Target 2		Target 3	
Distance	1.93m	Distance	3.16m	Distance	--m
Angle	37.47°	Angle	-12.14°	Angle	--°
Speed	0.0m/s°	Speed	-0.72m/s°	Speed	--m/s°

Baud rate Select Baud Rate >

Multiplay
er
☐

Reboot Module
Restore Factory

MAC
C49DF6D8C1A3

Version number(Click to perform
OTA upgrade)
2.04.23101915

Baud rate Select Baud Rate >

Multiplay
er
☒

Reboot Module
Restore Factory

MAC
C49DF6D8C1A3

Version number(Click to perform
OTA upgrade)
2.04.23101915

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(5) OTA Upgrade: In the App, you can upgrade to an earlier or later version.

The screenshot displays the HLK-LD2450_C1A3 app interface. On the left, a radar-like sensor view shows three targets. Below this, a table lists target data:

Target 1	Target 2	Target 3
Distance: 0.43m	Distance: --m	Distance: --m
Angle: 19.45°	Angle: --°	Angle: --°
Speed: 0.0m/s°	Speed: --m/s°	Speed: --m/s°

Below the table are controls for Baud rate, Multiplayer (toggle), Reboot Module, and Restore Factory. The MAC address is C49DF6D8C1A3. At the bottom, a red box highlights the 'Version number(Click to perform OTA upgrade)' field, which shows '2.04.23101915'. A red arrow points from this field to the 'Start upgrade' button on the right.

On the right side of the app, the 'Select version' screen is visible. It shows two versions:

- Formal version:** Version: 2.04.23101915 (Current version), Size: 0.97MB, 2025-05-20 14:50:15. Details >
- Trial version:** Version: V2.14.25112412, Size: 0.99MB, 2025-11-26 10:17:23. Details >

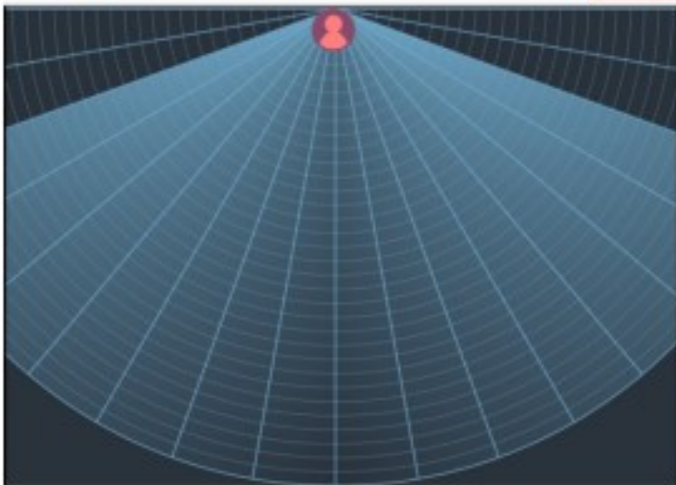
A blue 'Start upgrade' button is located at the bottom right of the app interface.

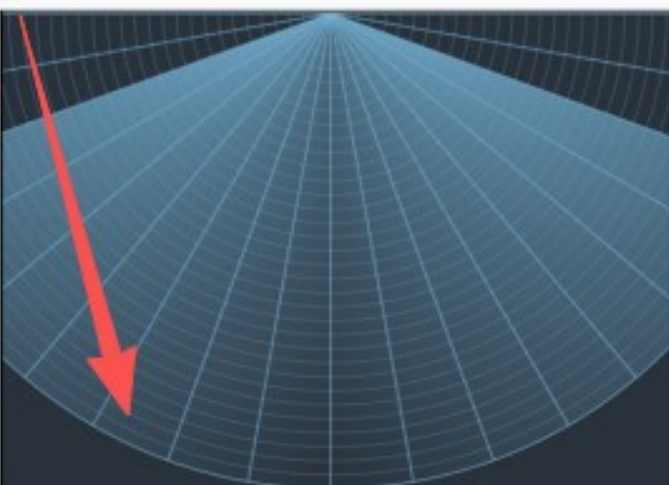
(6) Area Detection and Area Filtering: Area Detection only detects targets within the configured areas and ignores other areas; Area Filtering filters out targets within the configured areas while targets in other areas can still be detected. Area Detection and Area Filtering cannot be enabled at the same time.

< Back
HLK-LD2450_C1A3

Set

< Back
Parameter settings





Target 1		Target 2		Target 3	
Distance	0.43m	Distance	--m	Distance	--m
Angle	19.45°	Angle	--°	Angle	--°
Speed	0.0m/s°	Speed	--m/s°	Speed	--m/s°

Baud rate

Select Baud Rate >

Multiplay
er

Reboot Module

Restore Factory

MAC

C49DF6D8C1A3

Version number(Click to perform OTA upgrade)

2.04.23101915

Close detection ☒

Area Detection ☐

Area Filtering ☐

Area 1

(x:1.5m,y:1.4m,w:2.3m,h:2.4m) ☐

Area 2

(x:4.1m,y:3.7m,w:3.0m,h:2.4m) ☐

Area 3

(x:7.0m,y:1.7m,w:2.4m,h:2.4m) ☐

Submit

[< Back](#) Parameter settings

Close detection ☐ Area Detection ☒ Area Filtering ☐

Area	Coordinates (x,y,w,h)	Enabled
Area 1	(x:1.5m,y:1.4m,w:2.3m,h:2.4m)	☒
Area 2	(x:4.1m,y:3.7m,w:3.0m,h:2.4m)	☒
Area 3	(x:7.0m,y:1.7m,w:2.4m,h:2.4m)	☒

Submit

[< Back](#) Parameter settings

Close detection ☐ Area Detection ☐ Area Filtering ☒

Area	Coordinates (x,y,w,h)	Enabled
Area 1	(x:1.8m,y:1.3m,w:2.6m,h:2.3m)	☒
Area 2	(x:4.4m,y:3.7m,w:3.1m,h:2.4m)	☒
Area 3	(x:7.3m,y:2.2m,w:2.6m,h:2.0m)	☒

Submit

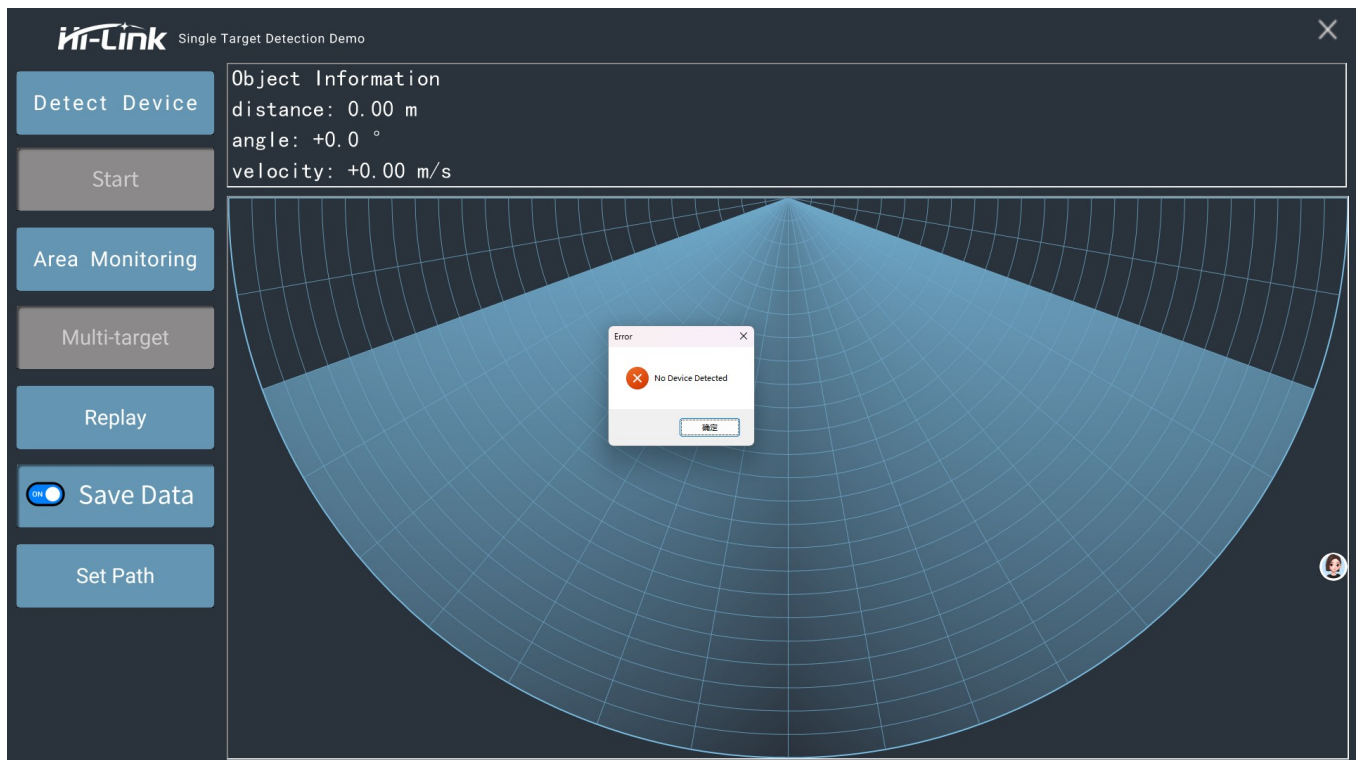
Area detection and area filtering can be configured separately.
 Note: these two functions cannot be enabled at the same time.

IV FAQ

4.1 Unable to Open the Serial Port Device?

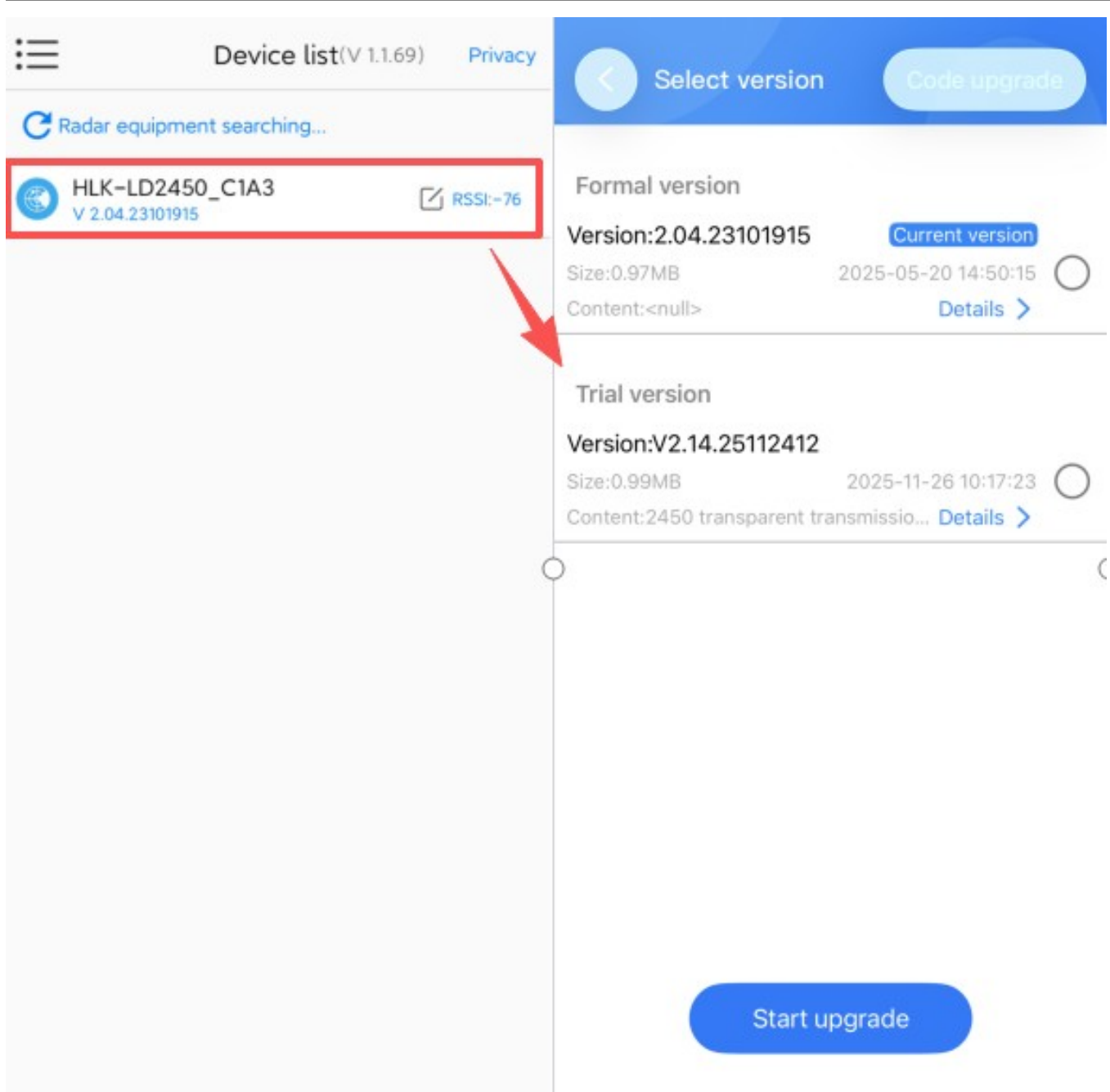
Solution:

- Check whether the driver is installed and whether the serial port is occupied by other software.
- Check the wiring, especially whether TX and RX need to be cross-connected.
- Check whether the baud rate is 256000. The current PC software supports only 256000 baud; if it has been changed, set it back to 256000 before testing.



4.2 Why Does the Software Have No Parameter Settings Page and Only Show OTA Support?

Solution: Older versions of the mobile App support only OTA. Parameter settings were added in later updates. Upgrade to the latest firmware via OTA before testing again (the original guide states that the latest firmware at that time was 2.04.23101915).



4.3 Why Does 68 01 Keep Appearing in the Data?

68 01 is the distance resolution, representing the size of a single distance gate. It is similar to a precision parameter and is a fixed value. In practical applications, this parameter can be ignored; only the X and Y coordinates and speed data need to be parsed.

4.4 What Is the Purpose of the LD2450 Antenna? Can It Be Left Disconnected?

4.5 How Do I Turn Bluetooth On or Off on the LD2450?

Turn Bluetooth On

- ## Turn Bluetooth Off

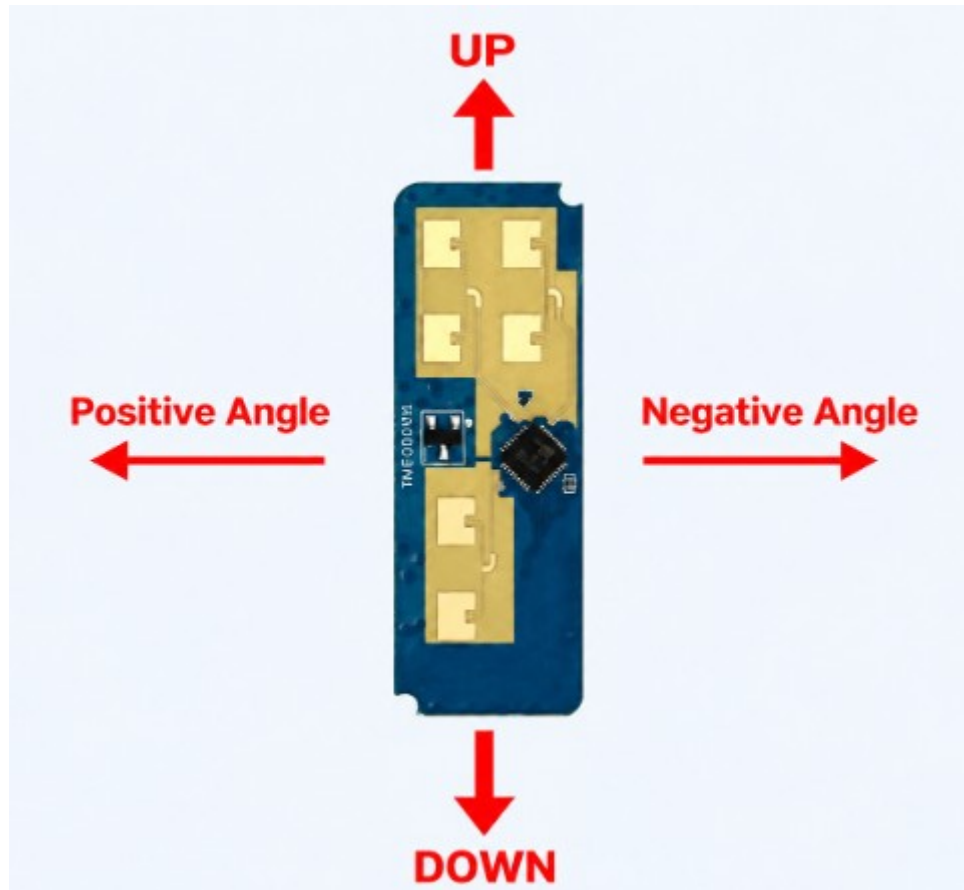
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3. Restart module: FD FC FB FA 02 00 A3 00 04 03 02 01

V Module Installation for Testing

Install the module in the orientation shown below. Refer to the LD2450 datasheet for the recommended installation height and other installation precautions.

Reference: HLK-LD2450-24G - Downloads - Hi-Link Electronics (hlktech.com)



VI LD2450 Coordinate Calculation

Note: The data uses little-endian byte order (low byte first, high byte second).

X/Y coordinate calculation: When X is positive, calculate $X - 2^{15}$; when X is negative, calculate $0 - X$. Y is always positive and is calculated as $Y - 2^{15}$.

The following are data examples from the original guide:

Example 1

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 55 CC

Item	X Coordinate	Y Coordinate	Speed	Distance Resolution
Bytes	10 01	52 83	00 00	68 01
Decimal	272	33618	0	360 mm
Calculation	$0 - 272 = -272$ mm	$33618 - 32768 =$ 850 mm	—	—
Target Coordinates	(-272, 850)			

Example 2

AA FF 03 00 E4 00 87 83 11 80 68 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 55 CC

Item	X Coordinate	Y Coordinate	Speed	Distance Resolution
Bytes	E4 00	87 83	11 80	68 01
Decimal	228	33671	32785	360 mm
Calculation	$0 - 228 = -228$ mm	$33671 - 32768 =$ 903 mm	$32785 - 32768 =$ 17 cm/s	—
Target Coordinates	(-228, 903)			

Example 3

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 55 CC

Item	X Coordinate	Y Coordinate	Speed	Distance Resolution
Bytes	BE 8A	47 8E	11 00	68 01
Decimal	35518	36453	17	360 mm
Calculation	35518 - 32768 = 2750 mm	36453 - 32768 = 3655 mm	0 - 17 = -17 cm/s	—
Target Coordinates	(2750, 3655)			