



RIA17

INSTALLATION GUIDE

CATALOGUE

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1. Safety Instructions

1.1 Warning Signs

Please operate correctly, otherwise it may damage the device or endanger personnel health..

1.2 Attention Signs

Caution items; ignoring them may prevent the device from being installed or used correctly.

2. Product Overview

2.1 Brief Description

The RFID ceiling antenna is a high-performance ultra-high frequency intelligent ceiling-mounted access control antenna newly developed by Dragon Group. It supports the ISO18000-6C protocol, with optional output power from 10dBm to 30dBm. Its features include strong anti-interference capability, sensitive multi-tag recognition, good scalability, and a simple and stylish appearance that is more suitable for various environments such as shopping malls, supermarkets, and clothing stores.

2.2 Product Features

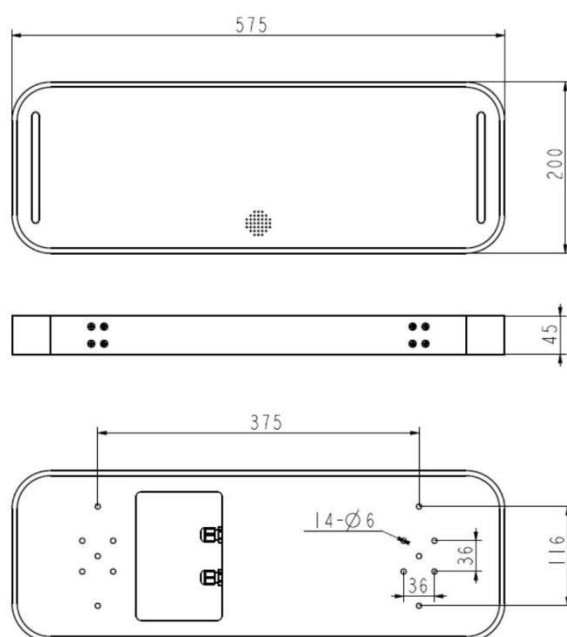
- Independent intellectual property design;**
- Supports EPC Global C1 G2 (ISO18000-6C) protocol;**
- Adjustable output power from 10dBm to 33dBm;**
- Sensitive multi-tag reading with high-speed tag reading performance;**
- Simple operation, simple and stylish appearance, easy installation;**
- Built-in alarm light and buzzer for dual protection, safe and reliable**



2.3 Main Technical Parameters

Hardware Interfaces	
Communication Interfaces	RJ45 (10M/100M), RS232 (9600 – 230400 bps), RS485 (19200 – 230400 bps), WiFi (2.4G)
Protocol	HTTP, TCP
Indicators	Custom indicator LED (green), Status indicator LED (red)
Power Supply/Power Consumption	
Supply Electricity	9 – 24V DC, standard adapter 12V / 5A
Power Dissipation	Standby: 1.56W Running: 15.4W
Environmental Specifications	
Working Temperature	-25°C - +65°C
Storage Temperature	-45°C - +85°C
Humidity	Relative humidity: 5-95% Non-condensing
Safety & Protection	
Powe Adapter	Air discharge: 8 kV ,Contact discharge: 6 kV , Surge immunity: 4 kV
Main Board	Contact discharge: 8KV

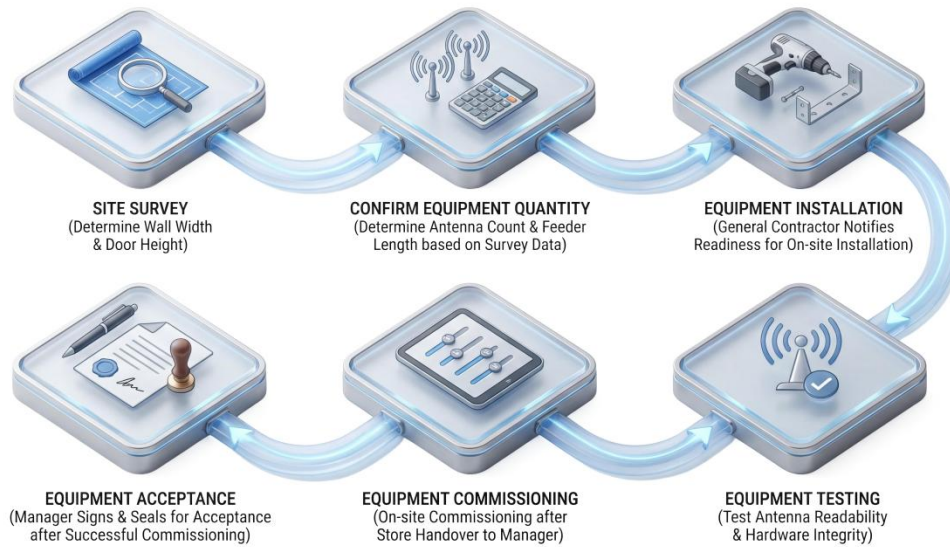
2.4 Product Dimensions



Dimensions: 575mm x 200mm x 45mm

3. Installation process

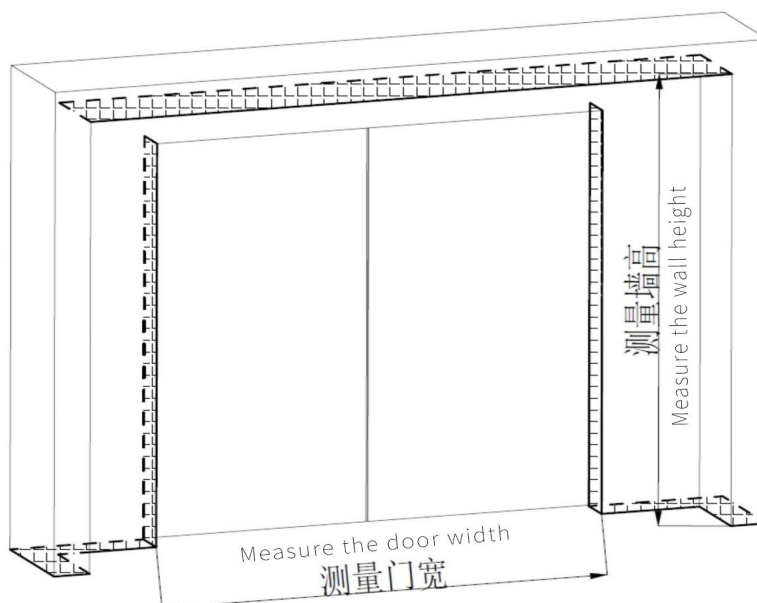
3.1 Process Summary



4. Site Survey

4.1 Survey Wall Height and Door Width

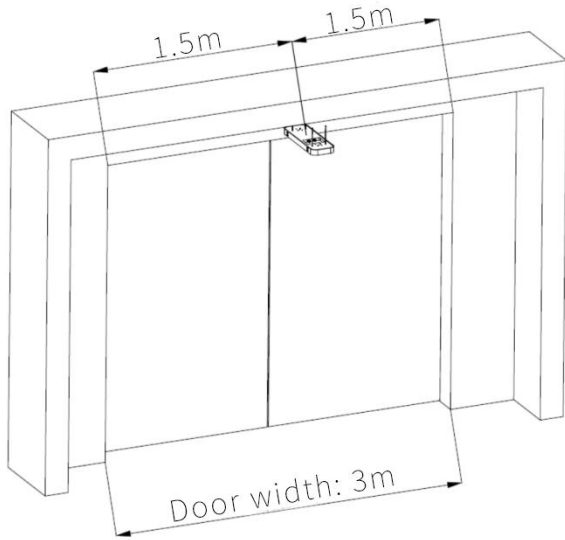
Based on the on-site wall height and doorway width, confirm the number of ceiling antennas required and the feeder length (construction party to lay conduits themselves).



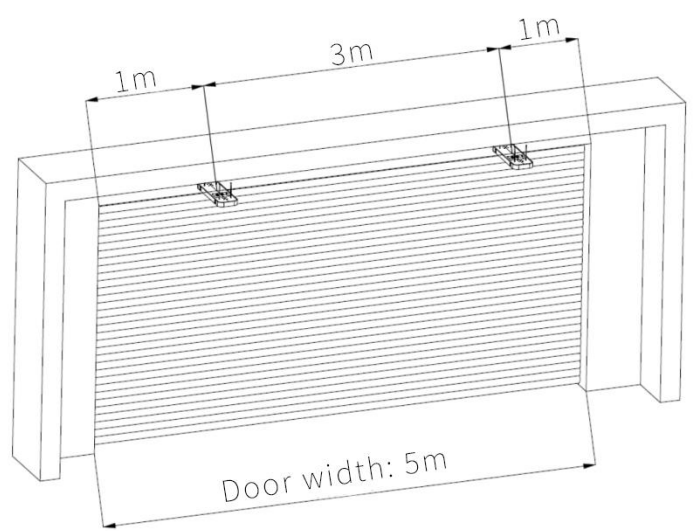
4.2 Confirm Number of Devices and Installation Positions

Ceiling Antenna: Confirm the number of ceiling antennas based on the measured door width. The recommended installation width for one ceiling antenna is about 3 meters.

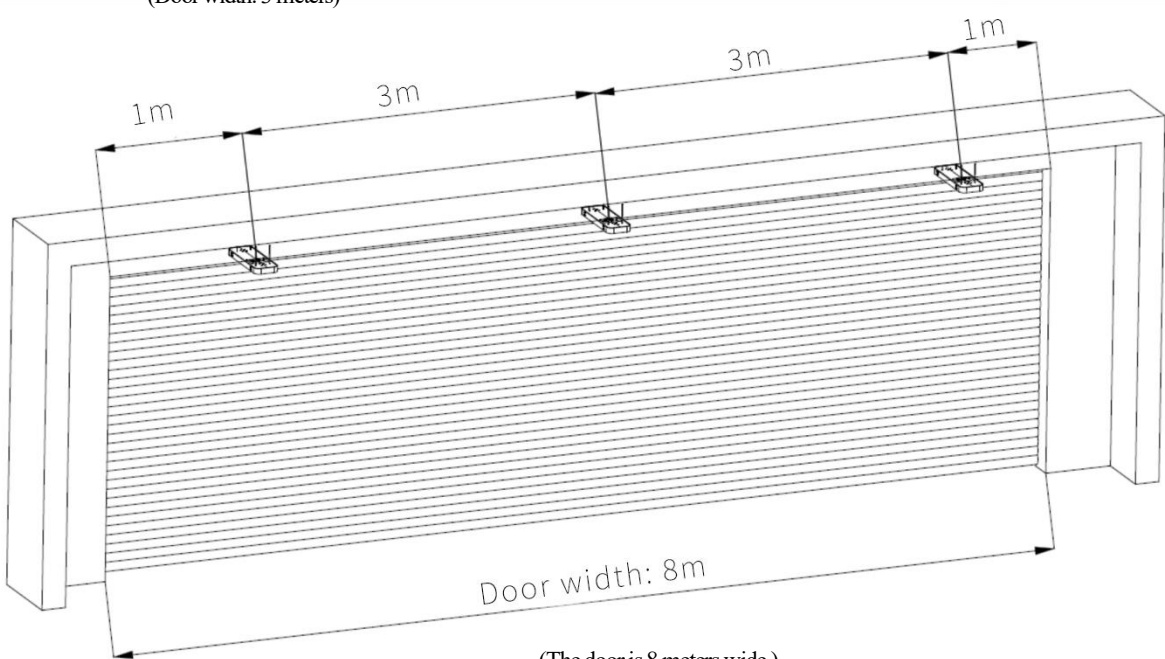
(For example, a 3-meter door width requires 1 ceiling antenna host, a 5-meter door width requires 2 hosts, and an 8-meter door width requires 3 hosts).



(Door width: 3 meters)



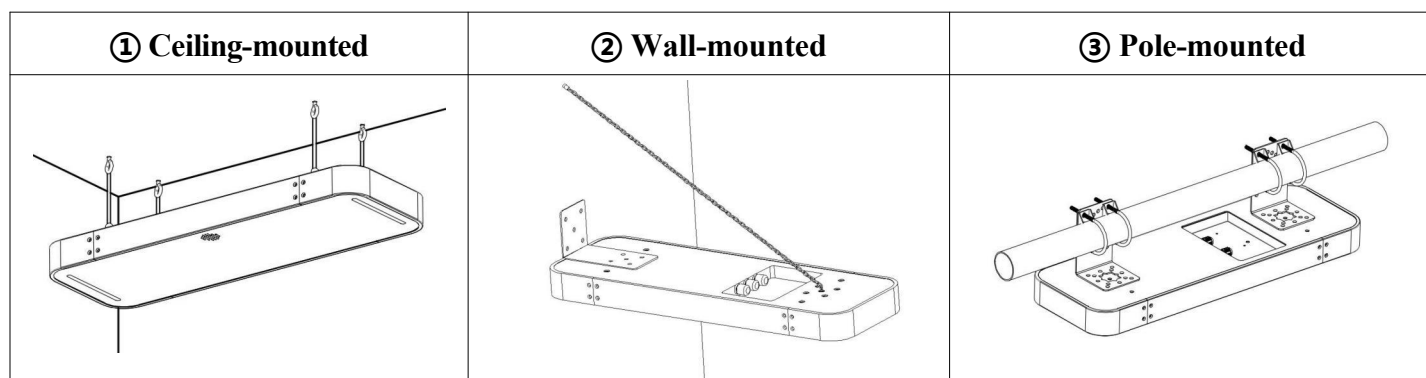
(Door width: 5 meters)



(The door is 8 meters wide.)

Conduit: Measure the door width, wall height, and access port position. The construction party can lay the conduits themselves based on the measurement data.

4.3 Confirm the installation method



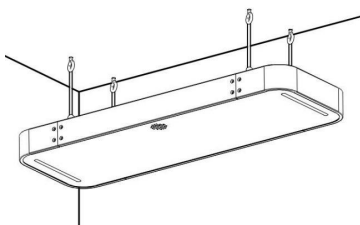
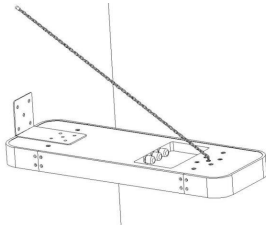
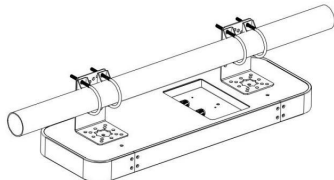
5. Pre-installation preparation

5.1 Antenna Accessories

Item	Picture	Item	Picture	Item	Picture	Item	Picture	Item	Picture
Power cable (1pc)		Power adapter (1pc)		Ethernet cable (1pc)		Angle bracket (1pc)		U-shaped clamp (4pcs)	

The accessories in the upper image are provided with the product.

The lower image shows additional accessories required for different installation methods:

Way to Install					
① Ceiling-mounted		② Wall-mounted		③ Pole-mounted	
					
Additional Accessories Required					
M6 expansion bolts with eye ring (4 pcs)		Angle bracket(1pc) M6 external expansionbolts (4 pcs)		Pole	
Steel wire rope		Steel wire rope with clamps (2pcs)		Angle brackets (2 pcs)	
Wire rope clamps (4pcs)		M6 expansion bolt with eye ring (1 pc)		U-shaped clamps (4 pcs)	
		M6 bolts (4 pcs)		M6 bolts (8 pcs)	

5.2 Installation Tool Preparation and Construction Requirements

Replacement Tool :

NAME	PICTURE	NAME	PICTURE	NAME	PICTURE
Hammer drill (with Ø8 mm drill bit for M6 external expansion bolts)		Measuring tape		Spirit level	
Wire stripper		Ethernet cable (length ≥ 5 m)		Power extension strip (length ≥ 5 m)	
Marker pen		Hammer		Cable conduit	
Safety helmet		Safety harness		Ladder	

Construction Requirements: The construction party must clearly understand and comply with the mall's construction regulations! Do not engage in behaviors that violate the mall's construction regulations. For example, according to relevant mall construction regulations: Construction personnel must strictly wear safety helmets, personnel involved in climbing must wear safety belts and other safety protective equipment; special operation personnel must hold corresponding operation certificates, etc.! Avoid fines!

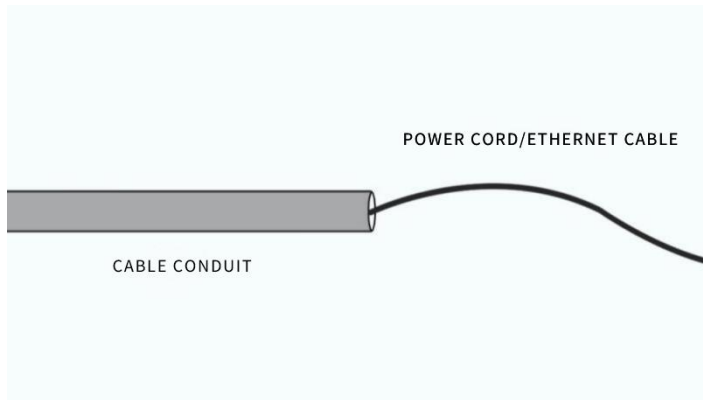
6. Installation Instructions

6.1 Actual Installation Diagram



6.2 Installation Points

To better ensure safety and aesthetics, power cords and network cables must be protected with conduits.



6.3 Installation Method

Install each antenna in sequence according to the selected installation method.

① Ceiling-mounted	② Wall-mounted	③ Pole-mounted
A line drawing showing a rectangular antenna unit being mounted to a ceiling. Four screws are shown being driven into the ceiling through pre-drilled holes in the corners of the antenna's mounting flange.	A line drawing showing a rectangular antenna unit being mounted to a vertical wall. Two screws are shown being driven into the wall through pre-drilled holes in the side of the antenna's mounting flange.	A line drawing showing a rectangular antenna unit being mounted to a horizontal pole. Two clamps are shown being secured around the pole through pre-drilled holes in the top of the antenna's mounting flange.

6.4 Wiring Method

- ① Connect the power cord to the power adapter;



- ② Connect the adapter power plug to the ceiling antenna power interface.

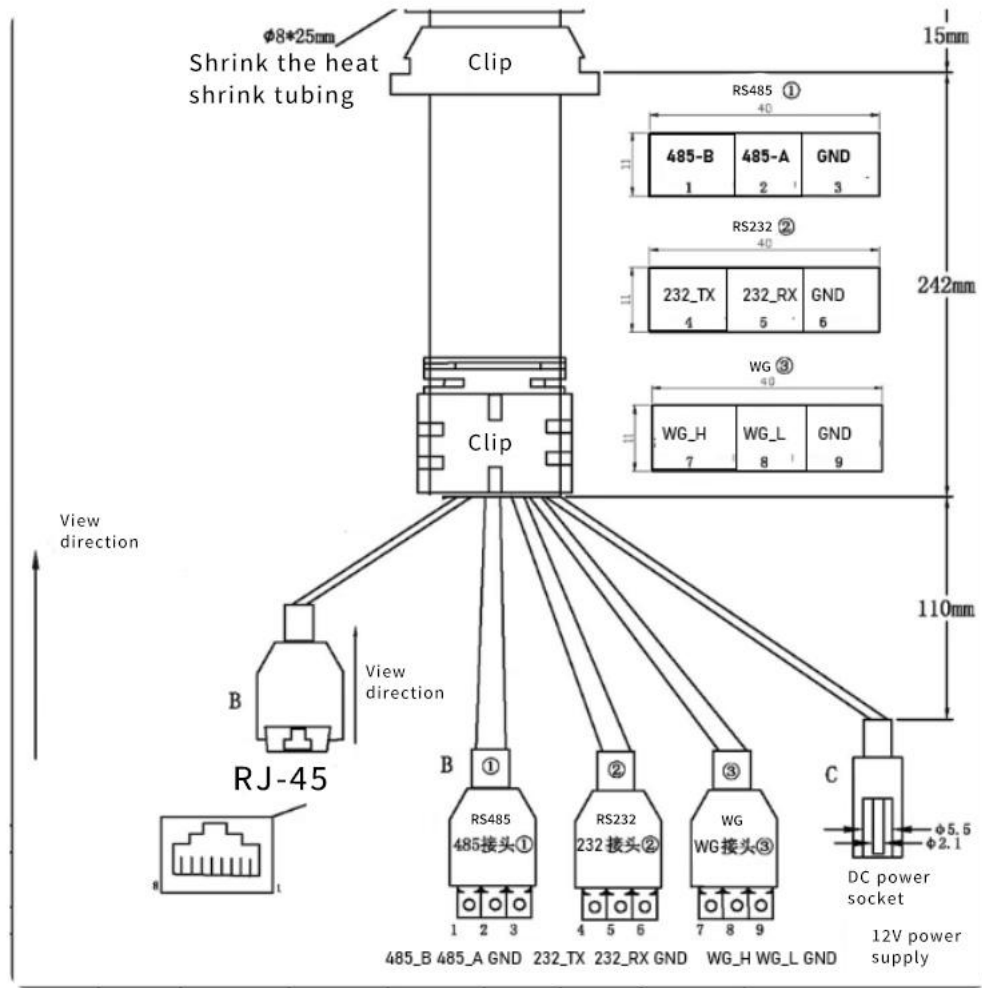


- ③ Connect the network cable to the ceiling antenna's network port, and connect the other end of the network cable to the computer.



- ④ Turn on the power, and the ceiling antenna will start working;

Note: In the above steps, ensure all connectors are fully inserted to prevent loosening that could affect equipment operation.



7. Equipment Testing

7.1 Antenna Lighting Status

When the antenna is working normally, the light is off; when alarming, the red light turns on.



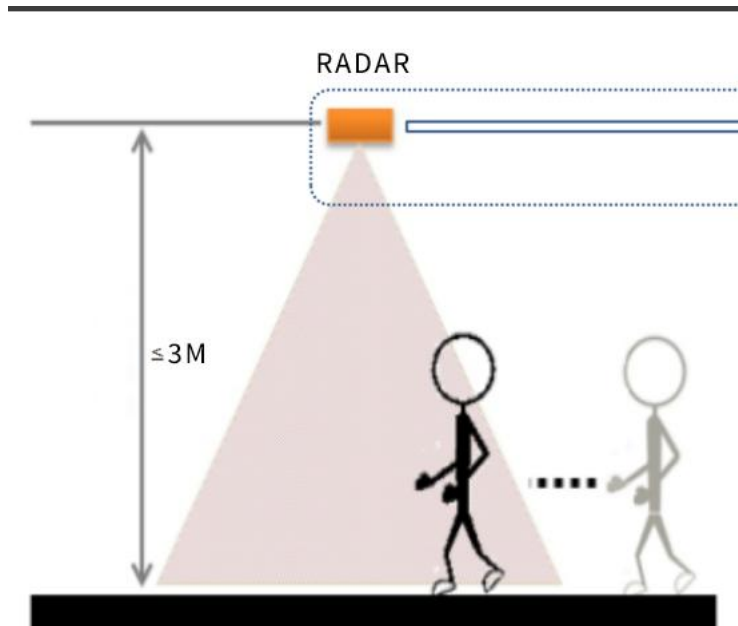
Power on – light off



(Alarm triggered-red light on)

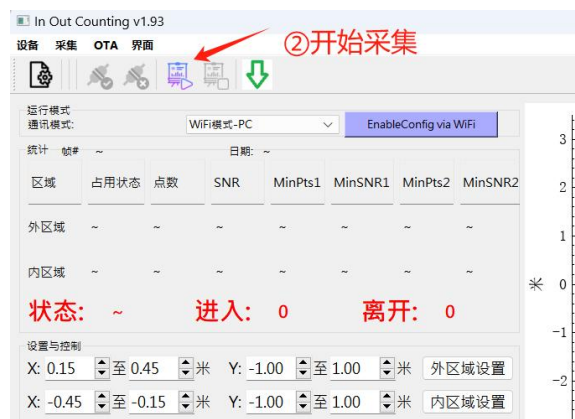
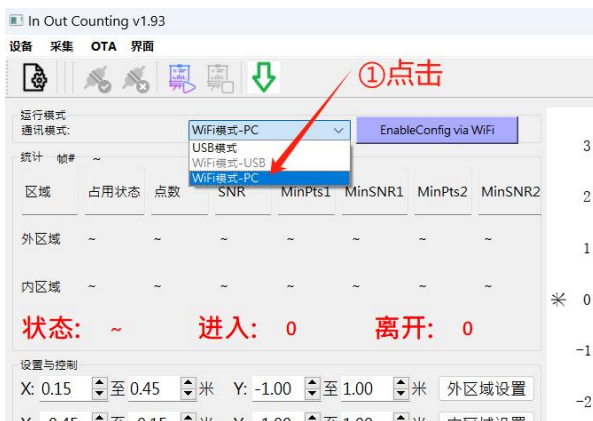
7.2 Sensing Range Adjustment

Sensing Range:

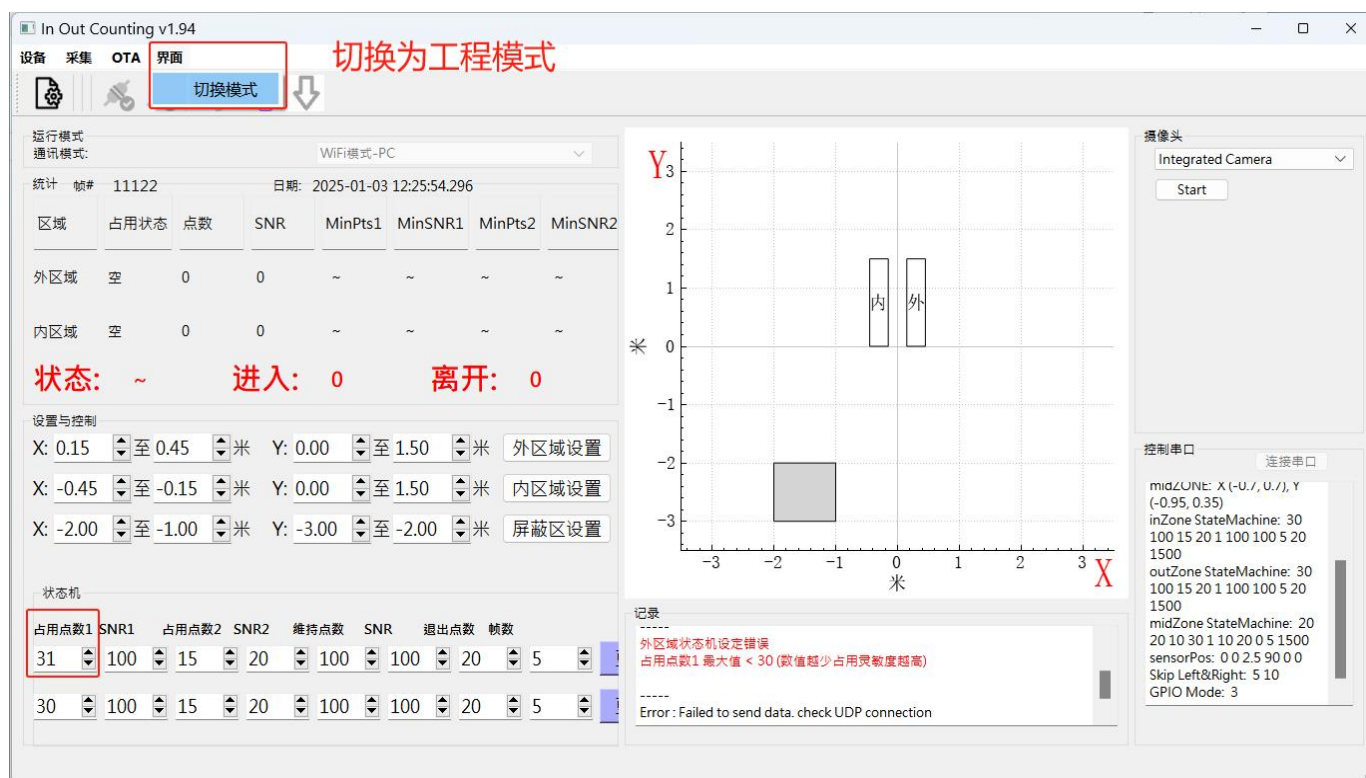


Sensing Range Adjustment:

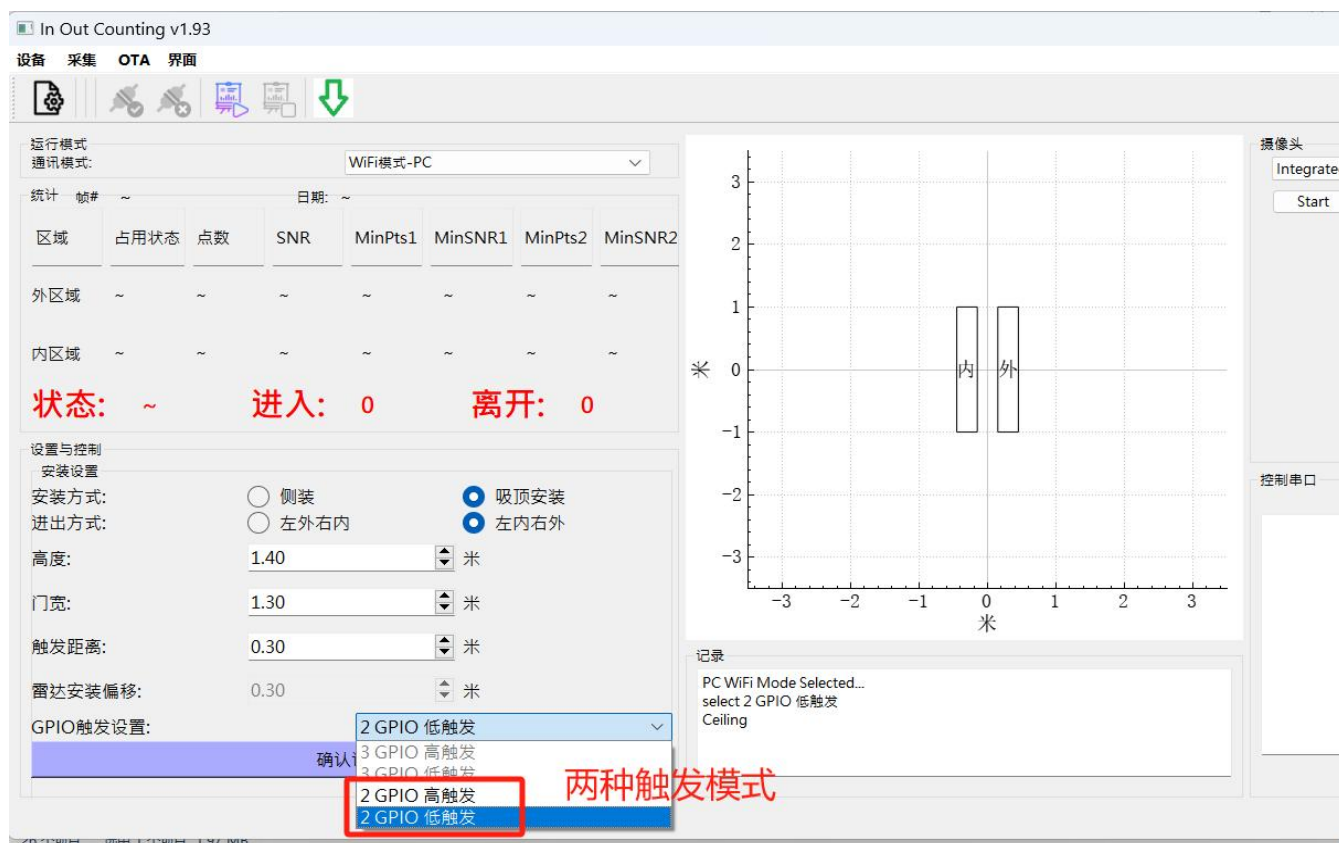
- Step 1: Figure 3 is a schematic diagram of connecting the computer to the radar software. The radar has a built-in WiFi AP hotspot: WiFi name ESP-xxxxxx; Password: 12345678. If no password is prompted, no input is required;
- Step 2: Unzip FullGUI_InOutCounting.zip;
- Step 3: Double-click to run InOutCounting.exe file.
- Step 4: Set the communication mode, select WiFi mode-PC, then click Collect to see the signals detected by the radar; as shown below:



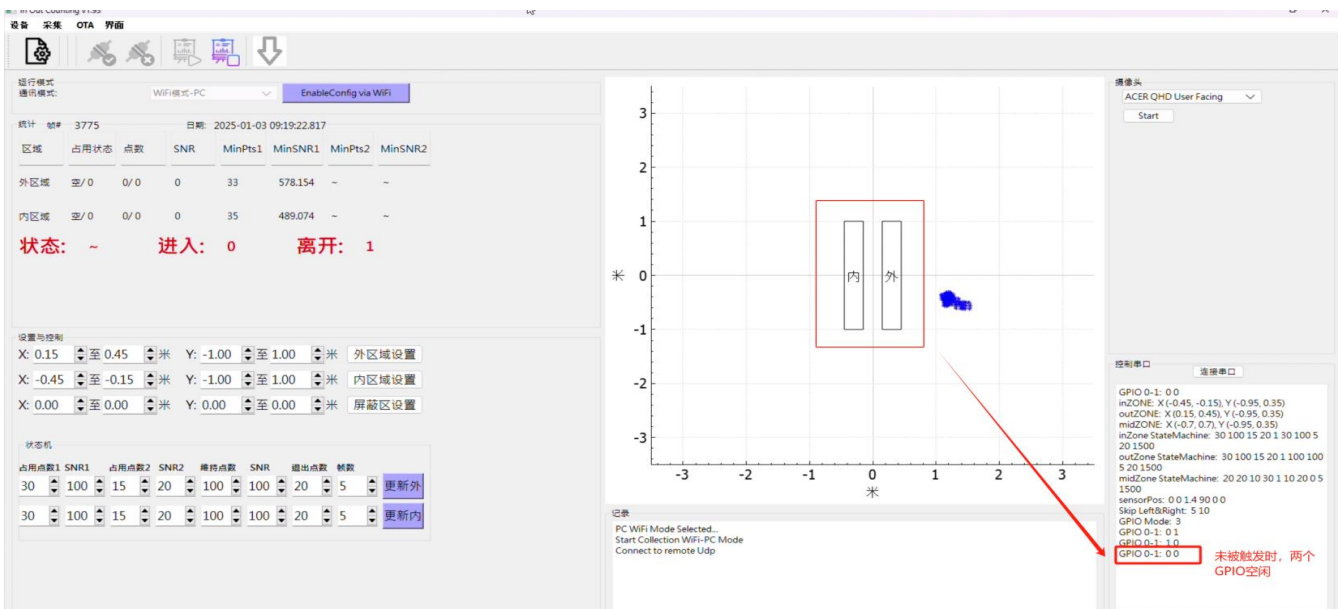
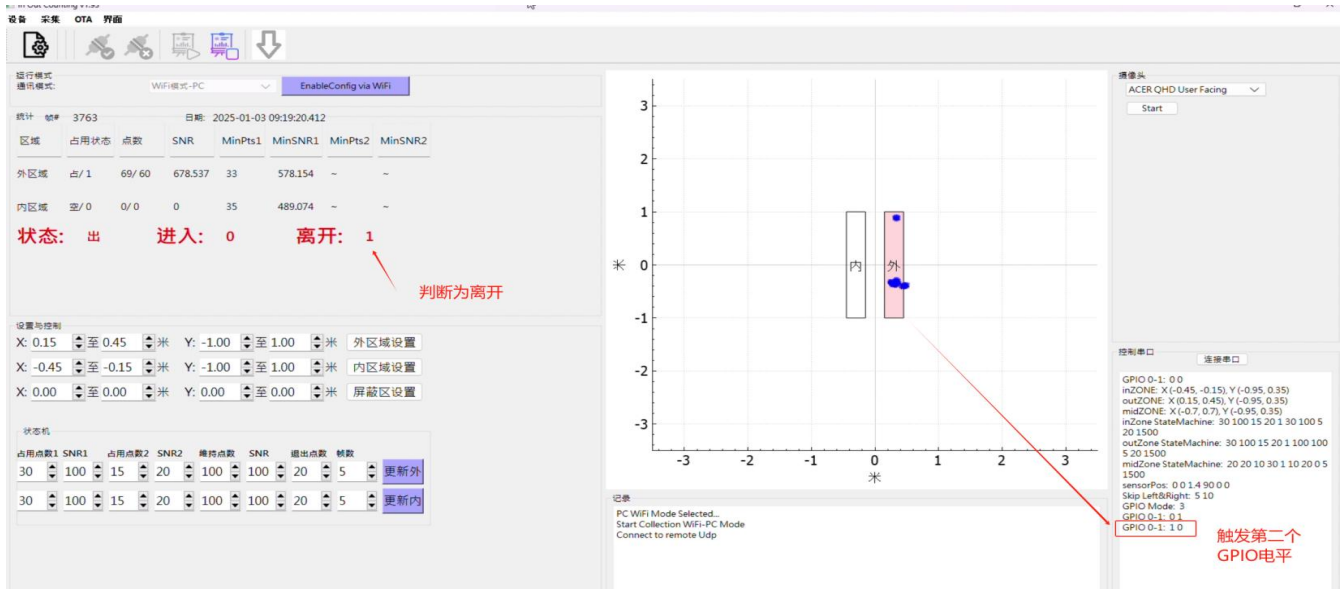
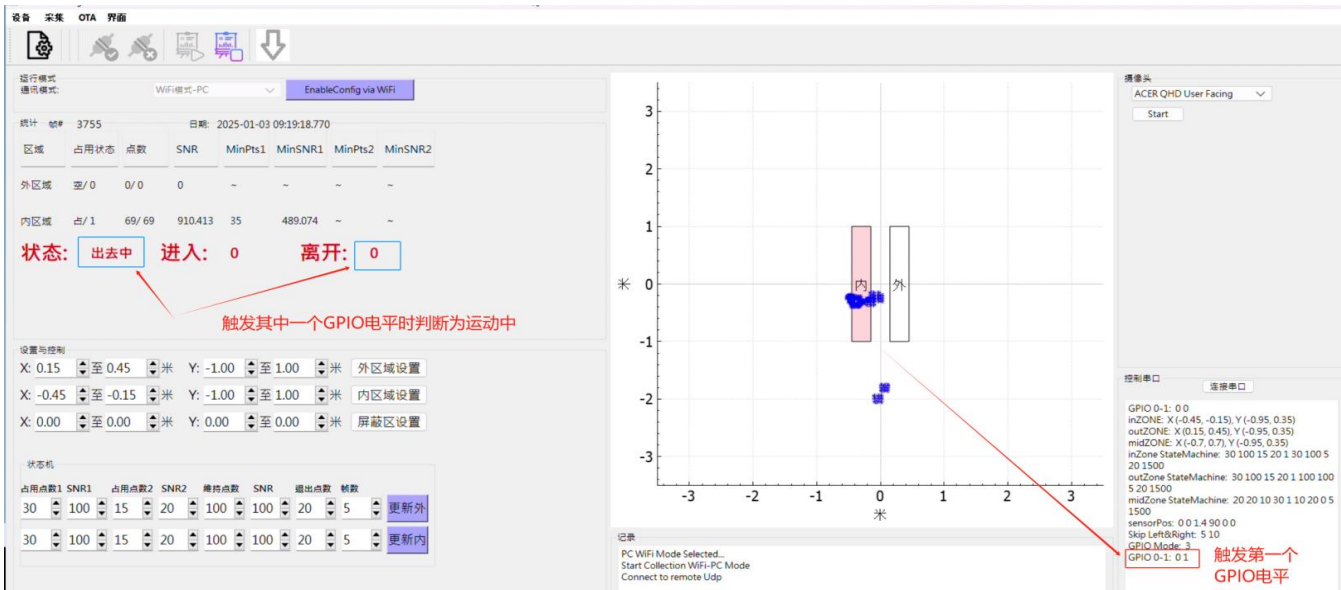
Step 5: Setup and Control Instructions:



Step 6: Adjust trigger logic:

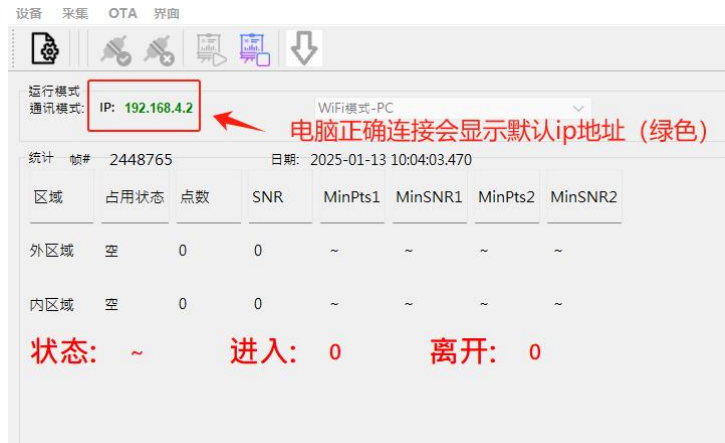


instance :

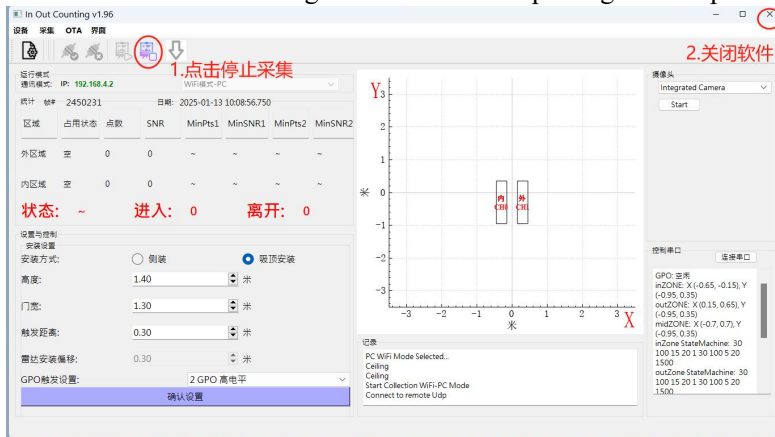


Frequently asked questions :

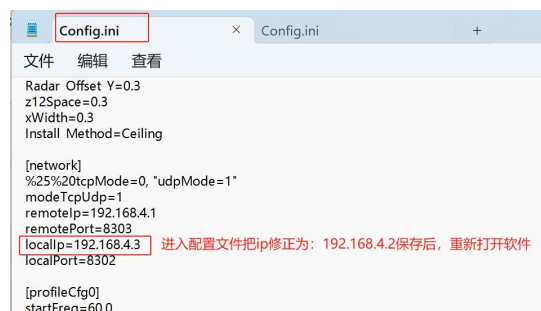
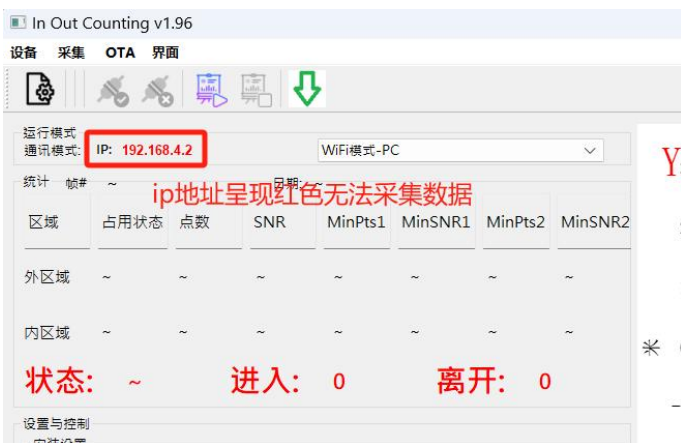
The device requires a valid IP address to connect.



Precautions for reconnecting the radar before replacing the computer:



Cannot collect solutions when replacing the computer. Modify the config.ini file in the software installation directory.



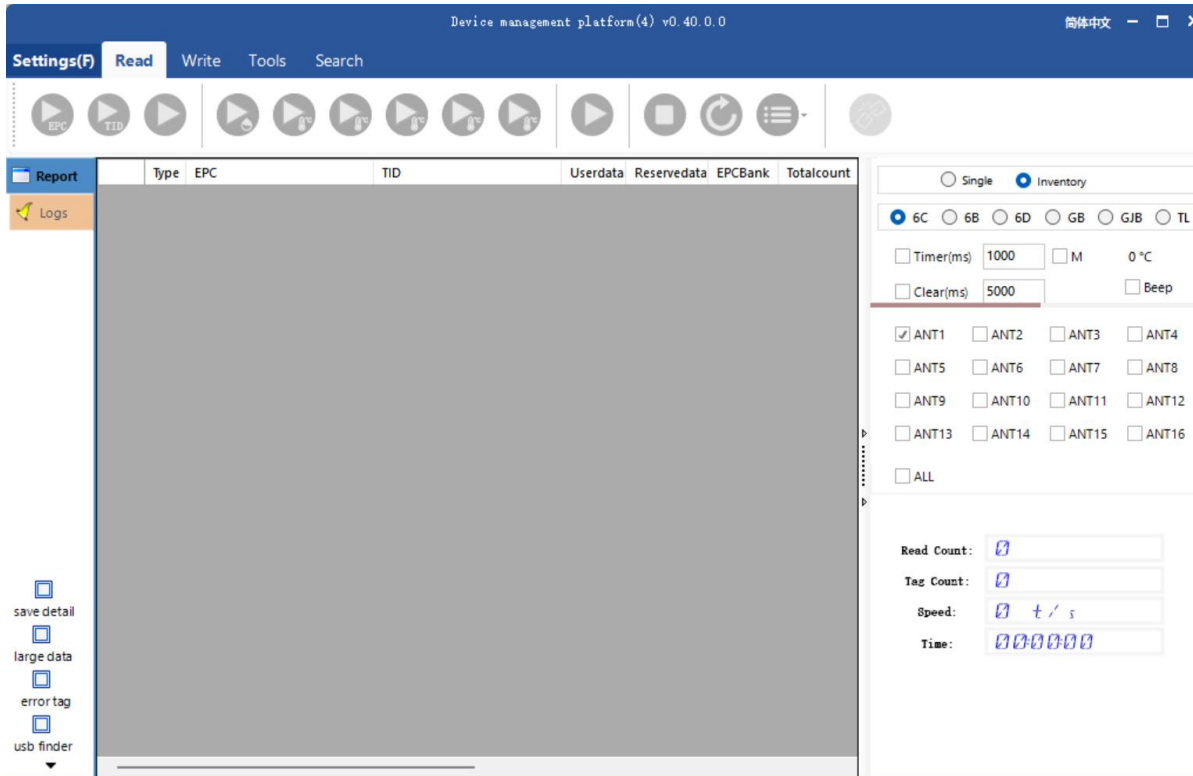
8. Software Debugging

8.1 Software Connection

This demo program is mainly used for demonstrating the functions and performance testing of the reader, and supports both network port and serial port communication.

8.1.1 Main Program Interface

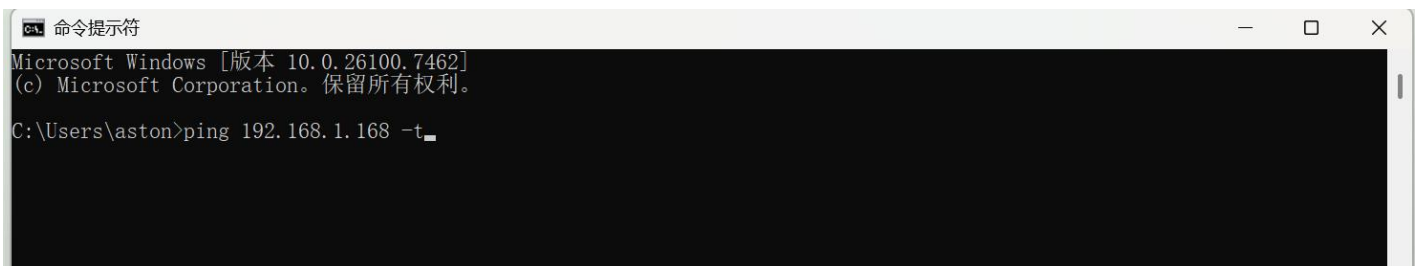
Open the GReaderTool program, as shown in Figure 1:



8.2 Reader Connection

8.2.1 Network Port Connection

In network port connections, the default address of the reader is 192.168.1.168, and the subnet mask is 255.255.255.0. The computer's IP address connected to the reader must be in the same subnet as the reader's IP address. After setting the computer's IP address correctly, go to System> Start> Run, enter the cmd command to open the command prompt, and type ping 192.168.1.168-t to check if the network connection is working properly. Check the connection is working properly before connecting the network port.

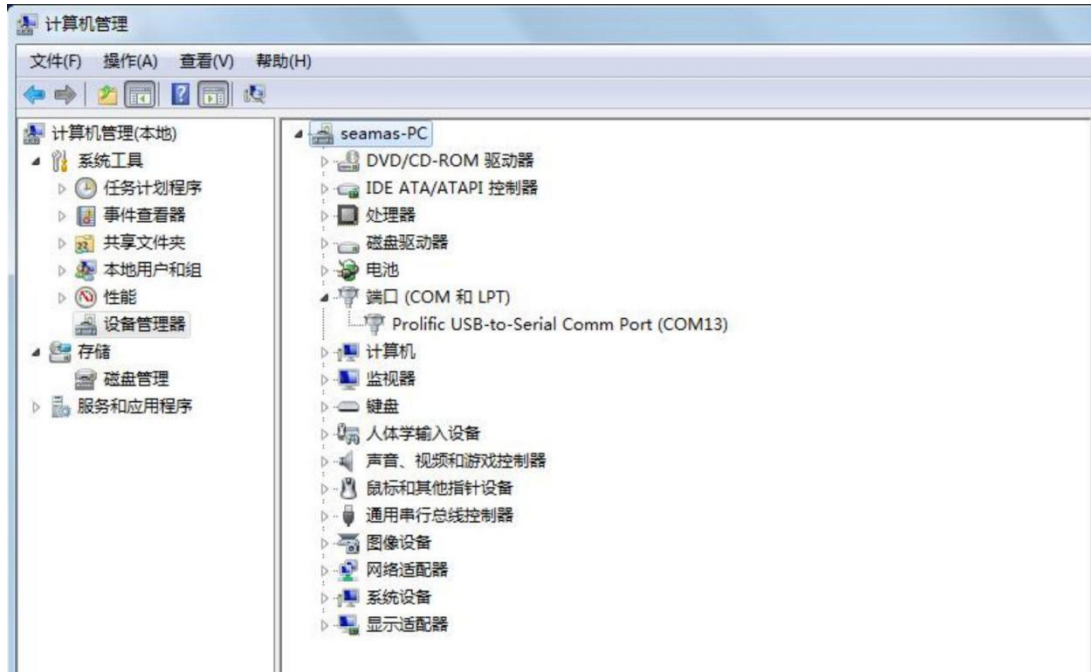


Check network port connectivity:

After confirming that the reader and computer IP are on the same network segment, click Connect to establish the connection. The connection is successful.

8.2.2 Serial Port Connection

When performing serial port connection, you must first install the driver for the serial device (if using a USB-to-serial cable or a USB port card issuing device) and then select the correct serial port address. The serial port address can be queried by right-clicking the "Computer" icon on the desktop, selecting Device Manager, and checking the Ports (COM and LPT) item in Device Manager. As shown in Figure 4:



(graph 4)

After identifying the serial port of the reader/writer, click the serial port number in the program to assign it to the first device port on the computer (if the first port is not the reader/writer port, manual modification is required).

8.3 Software Operation

For software operation, please refer to RFID Demo Operation Manual-C#.pdf and RFID Demo Software Operation Manual.pdf in the SDK.