Simplified Network ADS-B Ground Receiver ADSB-RE03

User Manual

Contents

1. Introduction

The ADSB-RE03 is an RTCA DO-260B/DO-260C compliant ADS-B ground receiver. Featuring an integrated ADS-B signal processing module, the device provides output of ADS-B raw messages over an RJ45 network interface.

It can be applied in civil aviation flight tracking, airport management, general aviation aircrafts surveillance, Detect-and-Avoid (DAA) subsystem, ADS-B IN capability for UAS situational awareness, radar calibration, academic research and education.

Packing List:

No.	Item	Quantity	Remarks
1	ADSB-RE03	1 unit	Included
2	Power Cable	1 piece	Included
3	ADS-B Antenna and Bracket	1 set	Included
4	ADS-B Antenna Cable	1 piece (3 meters)	Included
5	Network Cable	1 piece	Included

2. Specifications

ADSB-RE03:

No.	Specifications	
1	Power Supply	DC5V 2A
2	Power Consumption	3W
3	Receiving Frequency	1090MHz
4	Sensitivity	⩽ -90dBm
5	Receiving Range	> 300km (no interference, unobstructed)
6	Data Format	ADS-B raw messages
7	Data Interface	RJ45 network port
8	Network Connection	Static IP or DHCP
9	Network Protocol	TCP
10	ADS-B Antenna Interface	SMA female
11	Dimensions	144*113*40mm (main body)
12	Weight	435g

ADS-B Antenna:

No.	Specifications	
1	Frequency Range	1089-1091MHz
2	Bandwidth	60MHz
3	Gain	6dBi
4	VSWR	≤1.5
5	Direction Type	Omnidirectional
6	Polarization	Vertical polarization
7	Length	60cm
8	Weight	600g
9	Connector Type	N female
10	Mounting Type	Mast mount

3. Key Features and Benefits

- Cost-effective;
- Suitable for users capable of processing DF17/DF18 data, or for flight track display only;
- Ethernet data output, usable with or without a network switch;
- One receiver can simultaneously deliver data to multiple client terminals;
- Compact and lightweight design, can be powered by a power bank for convenient portable use.

4. Interface Description

Interfaces:

No.	Interface Name	Function
1	PWR	Power supply interface for main unit, DC 5V 2A
2	ANT	ADS-B antenna interface, SMA female
3	ETH	Data Interface, RJ45

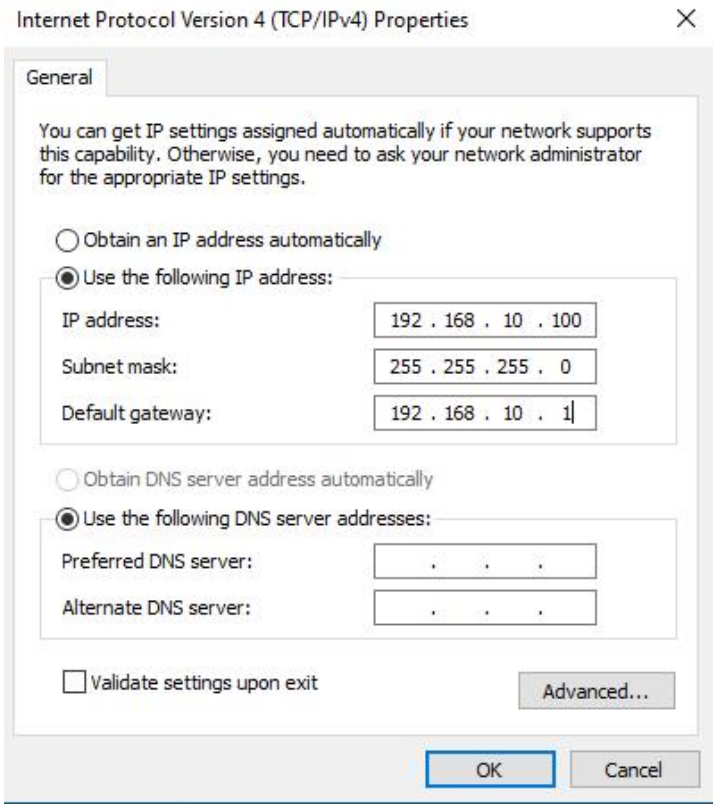
5. Connection

The default IP address of the ADSB-RE03 is 192.168.10.10. It must be connected to a computer via the network port, either directly or through a router.

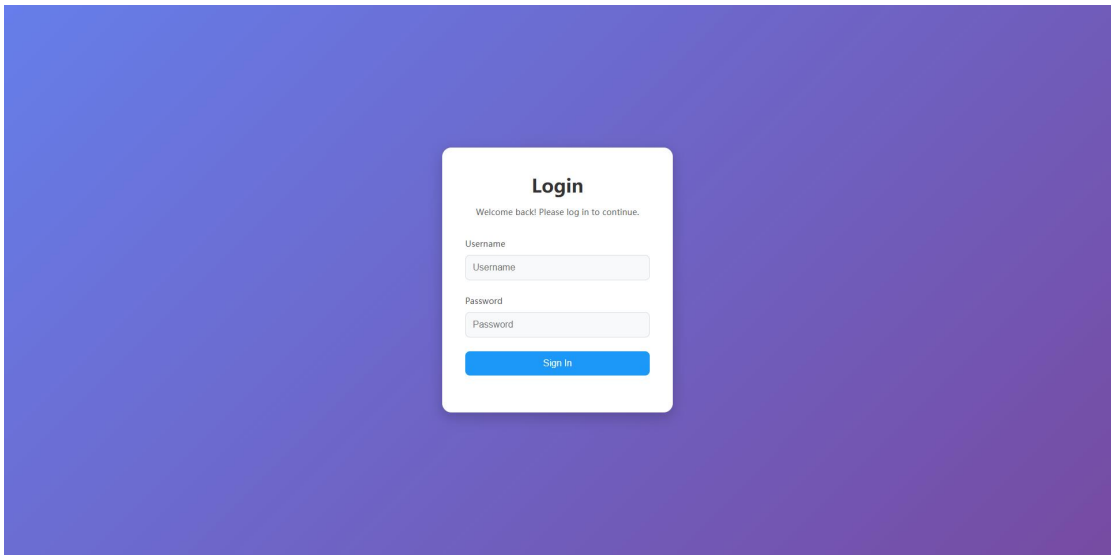
Direct Connection:

(1) Connect the ADSB-RE03 directly to the computer's network port using a network cable (or via a USB-to-RJ45 adapter).

(2) Open the network connection settings on the computer, locate the network adapter connected to the ADSB-RE03, and configure its IP address to be in the same subnet as the ADSB-RE03 (the static IP address of the ADSB-RE03 is 192.168.10.10).



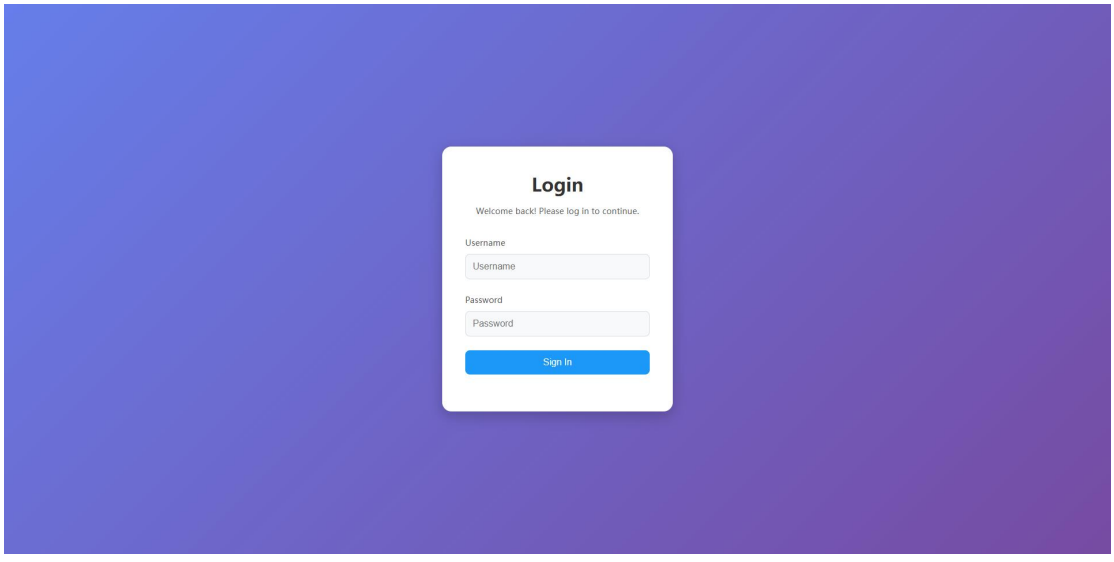
(3) Open a web browser, enter 192.168.10.10 in the address bar, and press Enter. If the following interface appears, the device is successfully connected.



Router Connection Method:

(1) Connect the ADSB-RE03 to the same router as the computer using a network cable (ensure the router's gateway is 192.168.10.1).

(2) Open a web browser, enter 192.168.10.101 in the address bar, and press Enter. If the following interface appears, the device is successfully connected.



6. Device Configuration

1. Backend Login

After connecting the device, enter the device's IP address in the browser's address

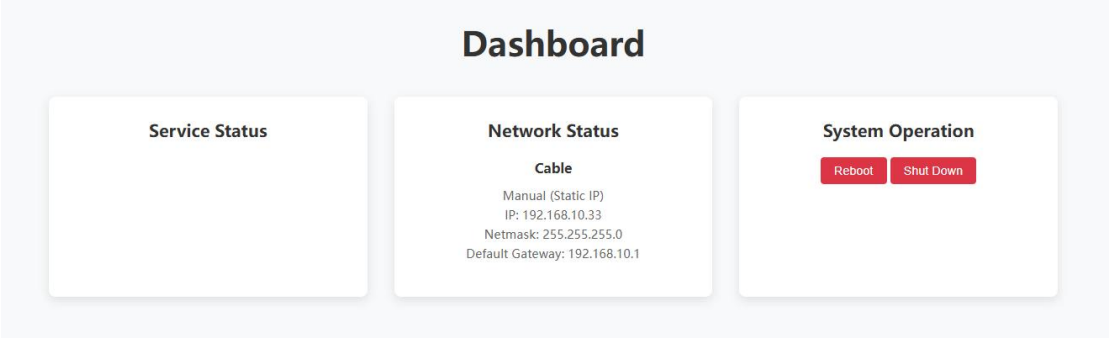
bar and press Enter. Then, input the device configuration management login credentials:

- **Username**: admin
- **Password**: chenbikeji

2. Configuration Interface Homepage

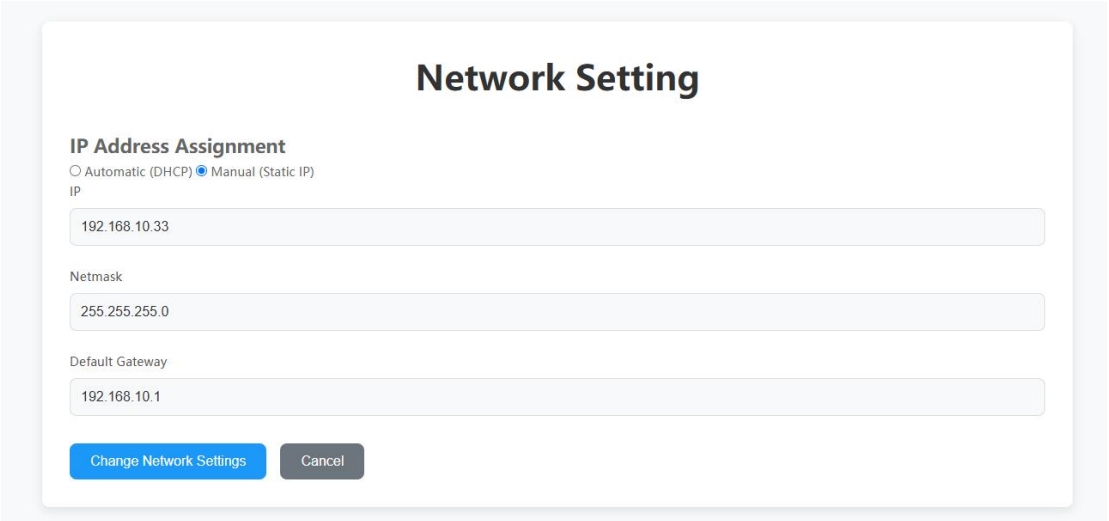
The homepage is divided into two main sections: the Menu Bar and the Status Bar.

- **Menu Bar:** Includes options for Network Configuration, Data Interface Configuration, and Logout.
- **Status Bar:** Displays the Service Status (indicating whether the device is receiving ADS-B signals), Network Status (showing the current network settings of the device), and System Operations (used for rebooting or shutting down the device).

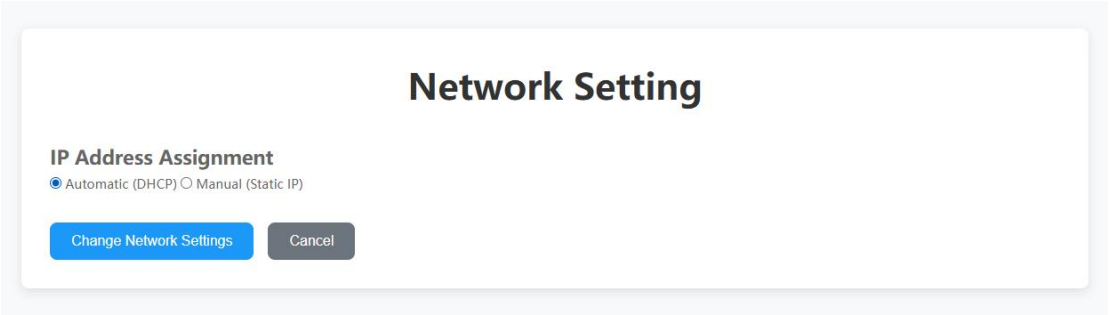


3. Network Configuration

There are two modes: Automatic (DHCP) and Manual (Static IP).

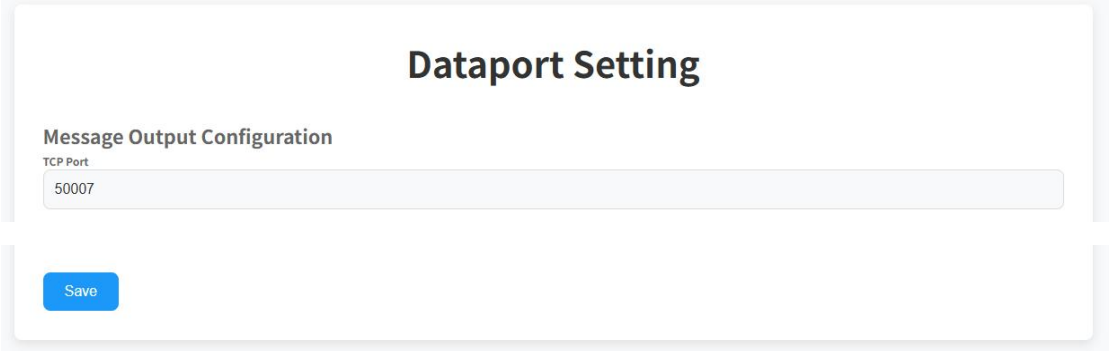


You can choose the Automatic (DHCP) mode for automatic IP allocation. After selecting this option, click Modify Network Configuration, and the changes will take effect after restarting the device.



Note: After switching to Automatic mode, the device must be connected to a router with the DHCP function enabled. Otherwise, you will not be able to log in to the device.

4. Data Interface Configuration



- **Message Output:** This uses the TCP protocol, and you can set the TCP server port. The device acts as the TCP server, while the computer acts as the TCP client. Multiple computers can receive the data simultaneously.

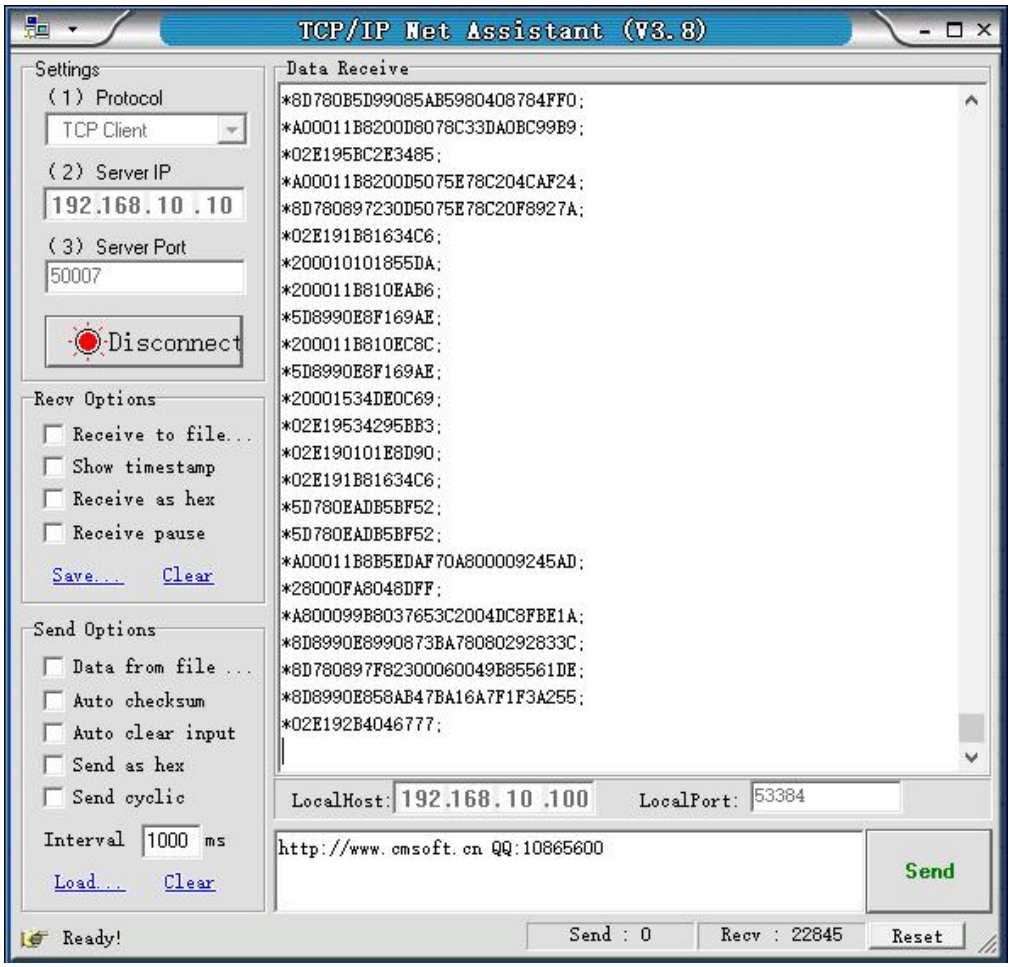
7. Data Format

You can receive ADS-B raw message information via TCP. To configure this, open the network debugging tool and set it as follows:

Protocol Type: TCP Client

Server IP Address: 192.168.10.10 (the IP address of the ADSB-RE03)

Server Port: 50007 (the TCP port set in the data interface configuration).



Raw Message Data Example:

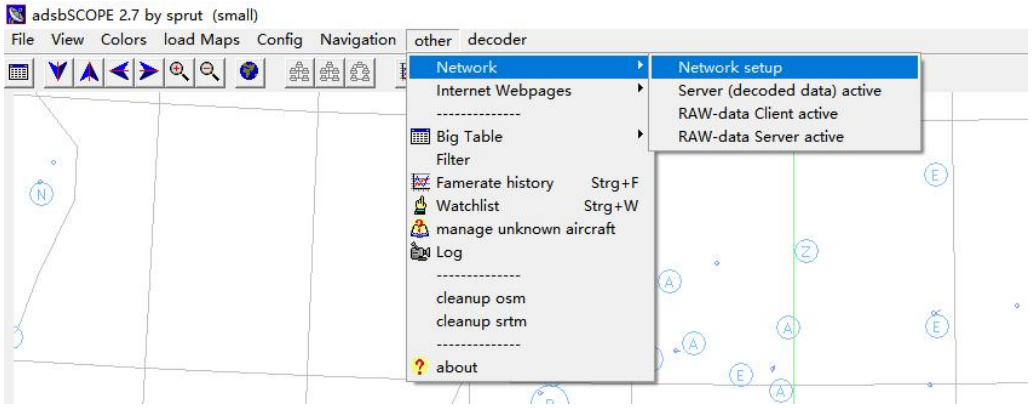
```
*5D780CD7AB6A2D;
*5D7BB0F9D35532;
*8D78151CEA38E866033C08E21D45;
*8D7815CB587B8406F1171F42B050;
```

8. Software Connection

The ADSB-RE03 can be connected to the display software adsbScope. The detailed steps are as follows:

(1) Open the display software adsbScope, such as adsbscope27_256.exe.

(2) In the top menu, go to Other, then select Network and Network Setup.



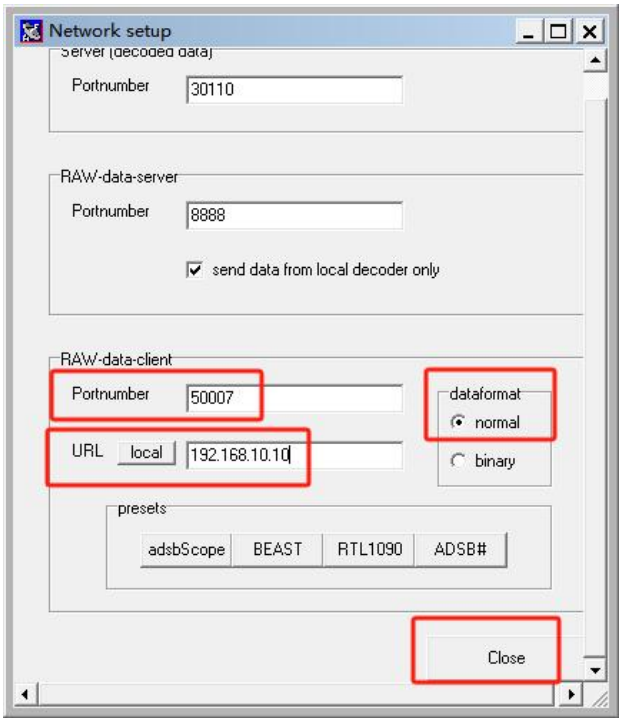
(3) In the pop-up window, enter the following:

Port number: Fill in the TCP port used in the ADSB-RE03 raw message.

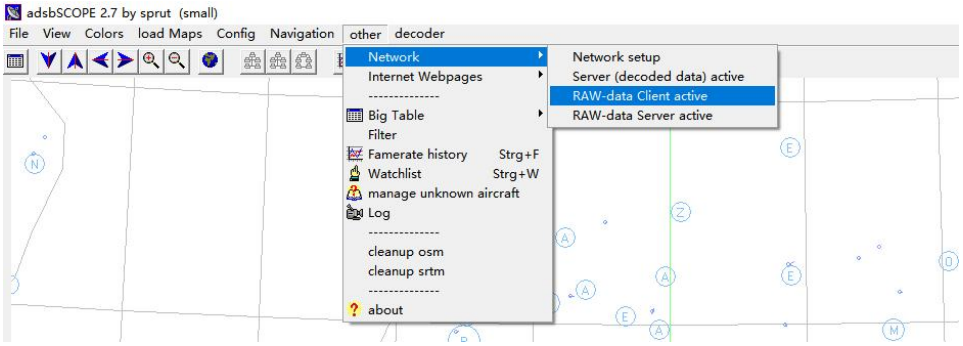
URL: Enter the device IP address.

Data format: Select Normal.

Click the Close button.

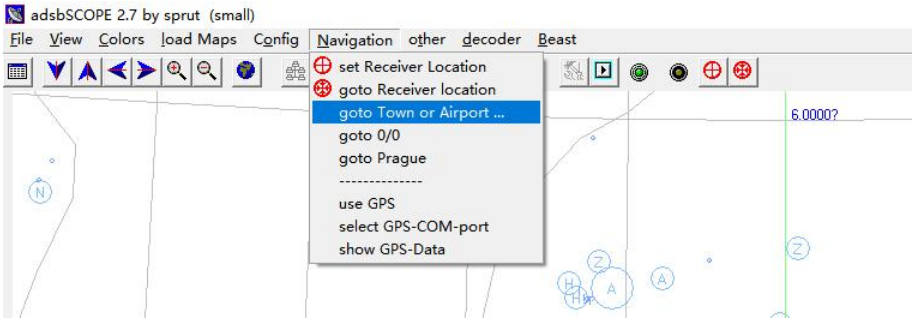


(4) Then, click Network in the top menu again, and select RAW-data Client Active.

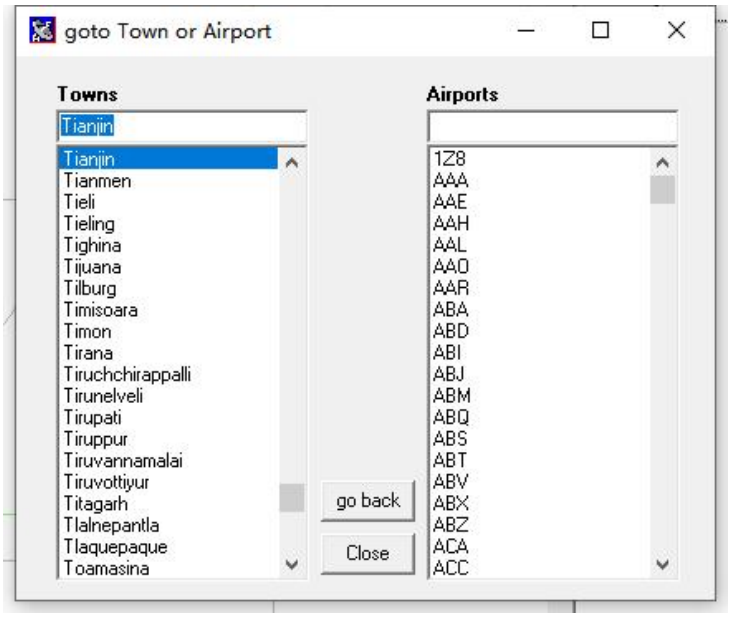


(5) At this point, you should see the received data on the right side of the software.

(6) Next, select Navigation in the menu and then Goto Town or Airport....



(7) In the pop-up window, type the name of the nearest airport (in English) in the Towns input box. Select the airport from the query list below, then click Close at the top right corner.



(8) The display software will now show the aircraft's location properly.

9. Customization

All our products can be supplied tailored to your specific needs and customized with your brand and logo. We tailor designs, enclosures, features, and data formats to meet your specifications. Our OEM services empower you to launch unique products swiftly and risk-free.

10. Important Notice

Our device must not and shall not be used for military purposes under any circumstances.

Our ADS-B equipment is for informational and surveillance purposes only. It is not certified for, and must never be relied upon for, air traffic control, navigation, or any other safety-critical function where human life may be at risk.