ADS-B module evaluation kit
GNS5894T StarterKit

1. Introduction

GNS5894T StarterKit is a lightweight, high-sensitivity ADS-B receiver module designed specifically for 1090 MHz “virtual radar” surveillance applications, with support for high-precision timestamp output.

It adopts a high dynamic signal processing circuit, enabling simultaneous reception of ADS-B data from both near-field and far-field sources.

The GNS5894T StarterKit integrates a high-sensitivity RF front end, signal processing unit, high-speed data decoder, and UART output, allowing easy connection to a host processor (PC/server). All ADS-B data is transmitted via the mini USB port. Users can also configure the GNS5894T StarterKit through a simple command interface for necessary settings.

The device package includes:

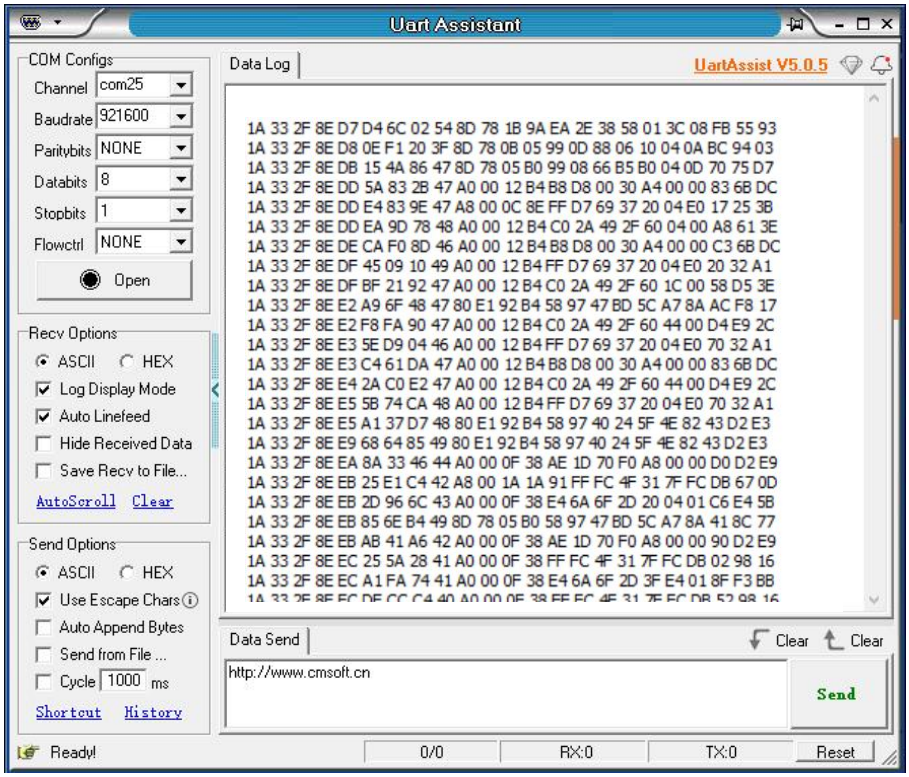
- Main Unit ×1
- Mini USB Cable ×1
- ADS-B Antenna Cable ×1
- ADS-B Antenna ×1
- GNSS Antenna ×1

2. Specifications

- Compact and lightweight design, high sensitivity, and support for high-precision timestamp output (requires connection to a GNSS antenna).
- Receiving Frequency: 1090 MHz
- Receiver Sensitivity: -105 dBm
- Data Interface: USB or UART serial port (requires removing the enclosure)
- Power Supply: USB
- Power Consumption: 42 mA
- Dimensions: 54 × 54 × 24 mm (excluding antenna connector)
- Antenna Connector: SMA

3. Data Format

Message structure, line encoding (“escaping” mechanism), and Mode-S data messages are all compatible with the Beast Binary Protocol. Below is an example of the data:



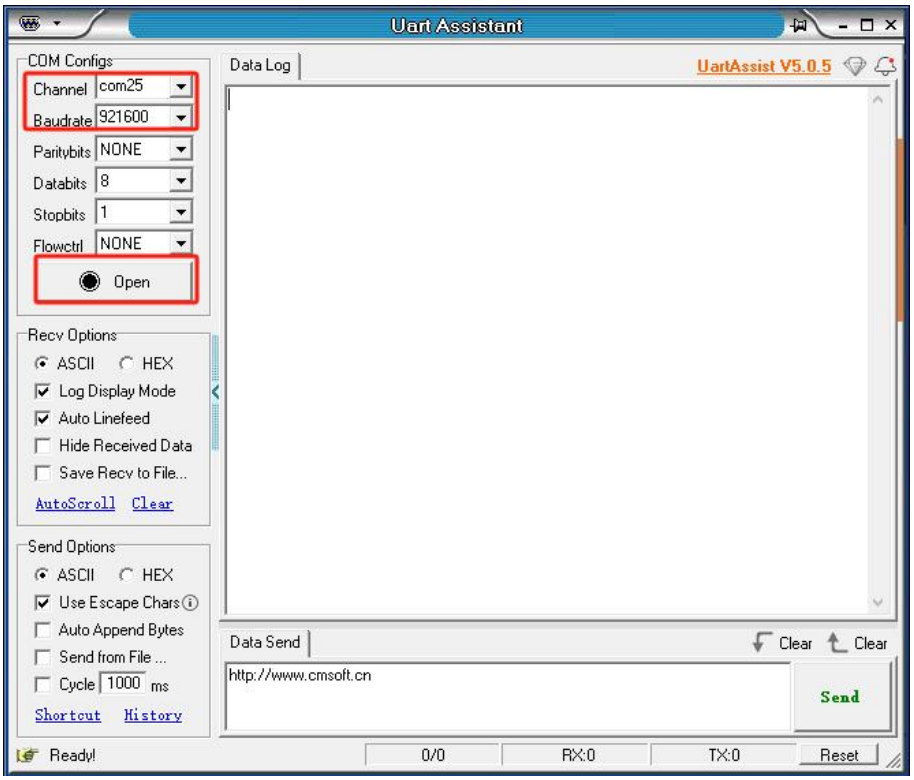
4. Receiver Connection

Connect the receiver to the computer via a miniUSB cable. Then, open the Device Manager on your computer. You should see a newly added port under the port section.

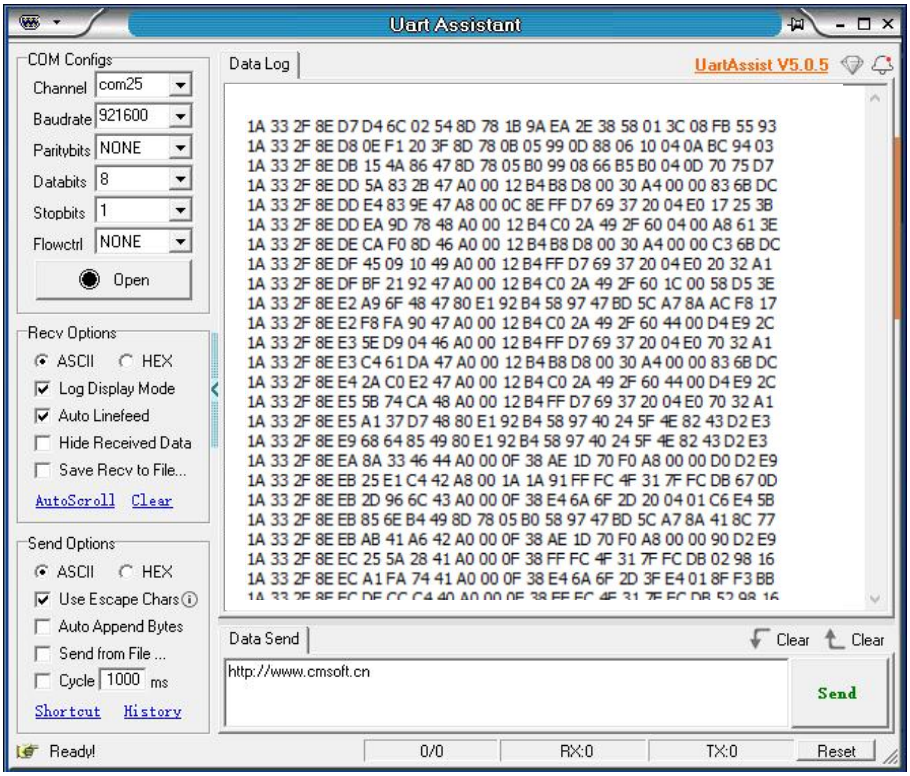
This port corresponds to the receiver port.

Connect the ADS-B antenna to the receiver.

Open the serial port debugging tool, select the corresponding port, choose a baud rate of 921600, and leave the other settings as default. Then, click "Open Serial Port."



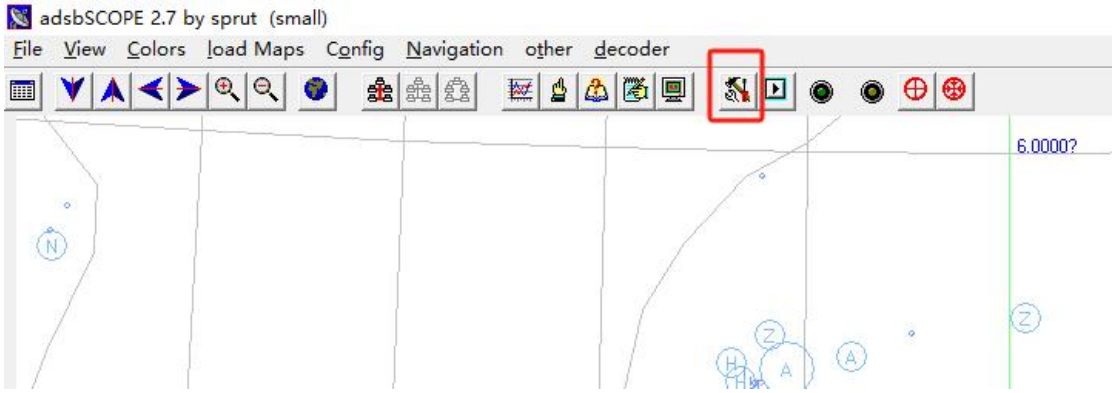
When the receiver indicator light is flashing green, it indicates that data reception is in progress.



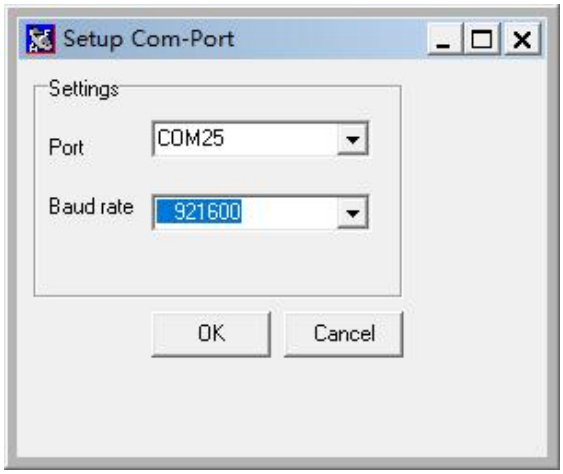
5. Configuring ADS-B Display Software

Open the adsbSCOPE ADS-B display software.

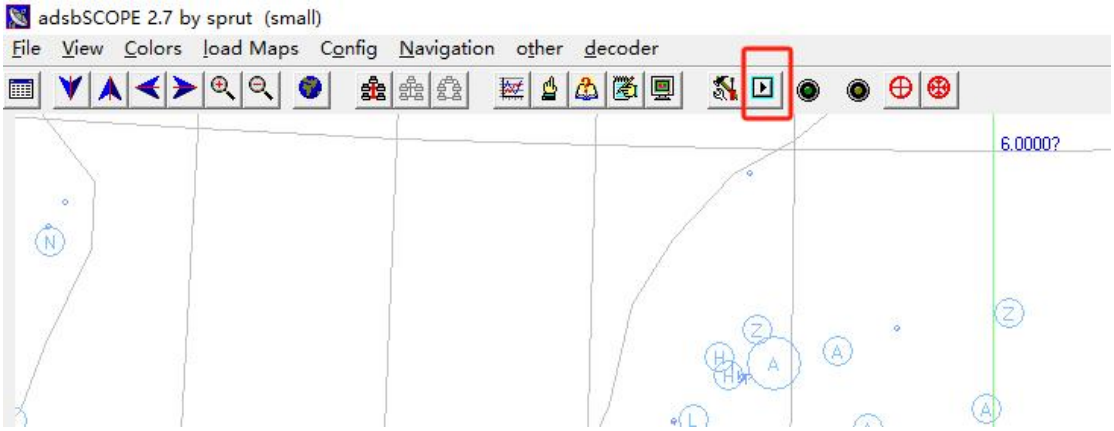
Open the "Serial Port Settings" window.



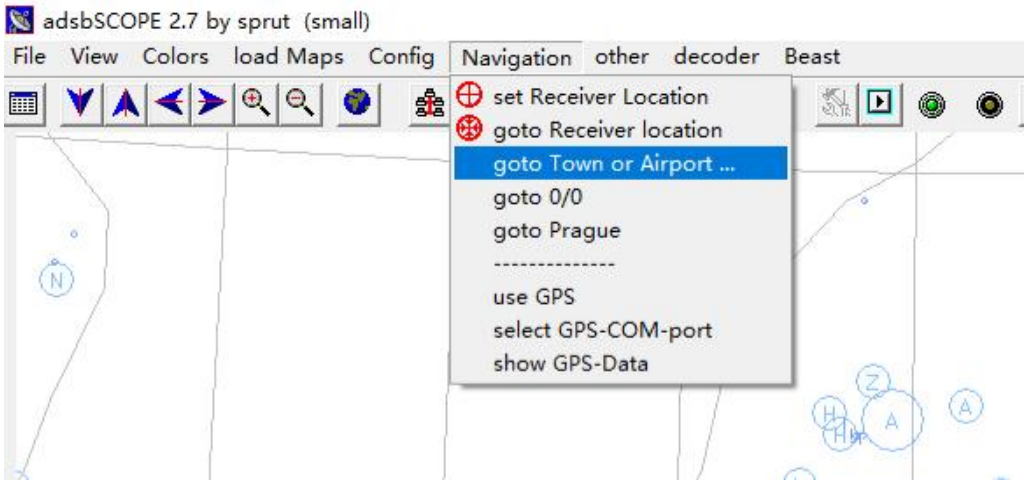
Select the appropriate port for the serial connection, choose a baud rate of 921600, and click the OK button.



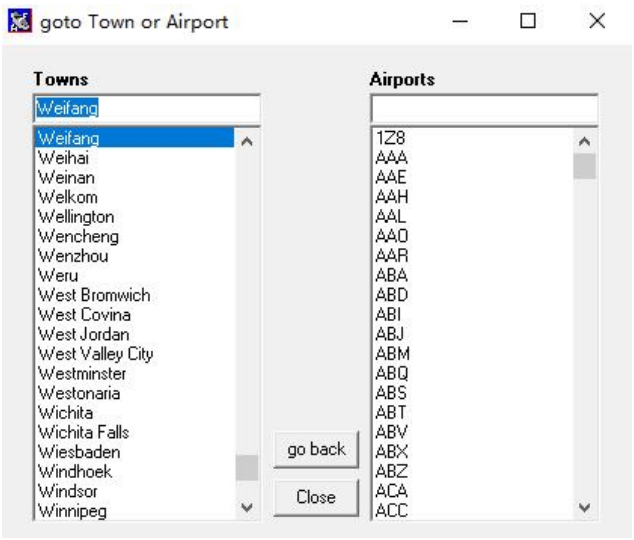
Click on the "Connect" button.



Open the "goto Town or Airport" window.



Select the airport closest to you, then click "Confirm Selection."



Display Successful

6. Customization

We're willing to do customization for you. Please don't hesitate to contact us and provide your requirement. We're happy to hear from you.