

# AIS Receiver AIS-RUS01

## User Manual

AvionixTech

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## 1. Introduction

The AIS-RUS01 is a portable and professional small-scale AIS receiver. It is a dual-channel AIS receiver integrated with a low noise amplifier (LNA), featuring compact size, lightweight, and low power consumption. The device can output data simultaneously via USB and serial port. The serial interface supports the RS232 protocol by default, with optional RS485 support available (please inform us of the selected option before shipment). RS422 or TTL customization is also available.



### Packing List:

| No. | Item                     | Quantity | Remarks  |
|-----|--------------------------|----------|----------|
| 1   | AIS-RUS01                | 1 unit   | Standard |
| 2   | USB-TypeB Cable          | 1 piece  | Standard |
| 3   | Small AIS Antenna        | 1 piece  | Standard |
| 4   | DB9 Male Connector       | 1 piece  | Standard |
| 5   | Professional AIS Antenna | 1 piece  | Optional |
| 6   | Antenna Cable (5m)       | 1 piece  | Optional |

## 2. Features

- Compact size, light weight, low power consumption
- Outputs standard AIVDM message format
- Supports AIS message types 1-27
- Supports dual AIS channels
- Highly configurable for various application scenarios
- Optional output of AIS signal strength
- Optional reception of “Long-Range AIS” signals
- Supports USB/serial port output

## 3. Specifications

AIS-RUS01:

| No. | Specification         |   |
|-----|-----------------------|---|
| 1   | Power Supply          | 5V 2A (USB-powered)<br>Other power supply options can be customized according to requirements |
| 2   | Power Consumption     | 70mA  |
| 3   | Reception Frequencies | 161.975 MHz, 162.025 MHz<br>156.775 MHz (Optional)<br>156.825 MHz (Optional)                  |
| 4   | Data Format           | AIVDM   |
| 5   | AIS Channels          | 2   |
| 6   | Sensitivity           | -115dBm   |
| 7   | Bandpass Filter Range | 156.3~162.025MHz  |
| 8   | Input Impedance       | 50Ω   |
| 9   | Output interface 1    | USB   |

|    |                    |  |
|----|--------------------|--|
| 10 | Output interface 2 | Default RS232<br>Optional RS485<br>RS422/TTL customization available |
| 11 | Dimensions         | 100x75.8x34.8 mm<br>(not including antenna connector)                |
| 12 | Weight             | 180g   |
| 13 | Antenna Connector  | SMA  |

## Small AIS Antenna:

| No. | Specification    |                            |
|-----|------------------|----------------------------|
| 1   | Frequency Range  | 149-189MHz                 |
| 2   | Antenna Gain     | 2dBi                       |
| 3   | Interface Type   | SMA                        |
| 4   | Antenna Size     | Length 110mm, Diameter 8mm |
| 5   | Antenna Material | ABS plastic rod            |

## Professional AIS Antenna:

| No. | Specification         |                              |
|-----|-----------------------|------------------------------|
| 1   | Frequency Range       | 156-166MHz                   |
| 2   | Antenna Gain          | 5dBi                         |
| 3   | Protection Level      | IP67                         |
| 4   | VSWR                  | ≤1.5                         |
| 5   | Polarization          | Vertical                     |
| 6   | Radiation Pattern     | Omnidirectional              |
| 7   | Input Impedance       | 50Ω                          |
| 8   | Power Capacity        | 50W                          |
| 9   | Interface Type        | N-J                          |
| 10  | Antenna Size          | Length 120 cm, Diameter 2 cm |
| 11  | Antenna Material      | Fiberglass                   |
| 12  | Total Weight          | 364g                         |
| 13  | Operating Humidity    | 5% ~ 95%                     |
| 14  | Operating Temperature | -40°C ~ +85°C                |

## 4. Interface



AIS-RUS01 Interfaces:

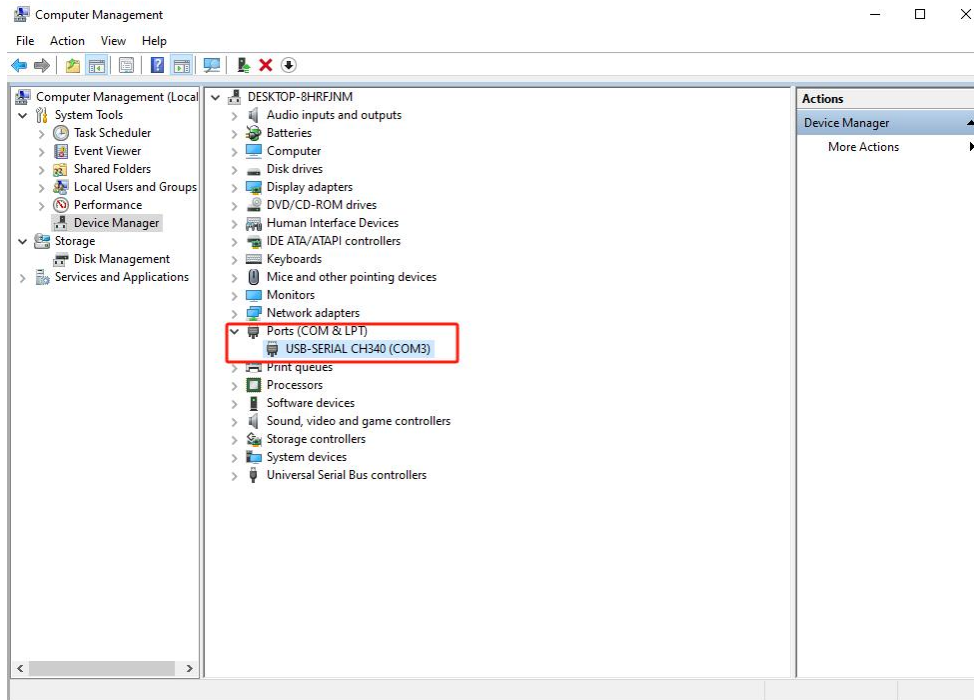
| No. | Interface Name | Function   |
|-----|----------------|--|
| 1   | USB            | Power supply for the main unit, data transmission  |
| 2   | PWR            | Power indicator light for the main unit  |
| 3   | DATA           | Data transmission indicator light  |
| 4   | ANT            | Antenna interface  |
| 5   | SERIAL         | Serial port interface, default RS232; for other protocols, please contact us for configuration |

SERIAL Configuration:

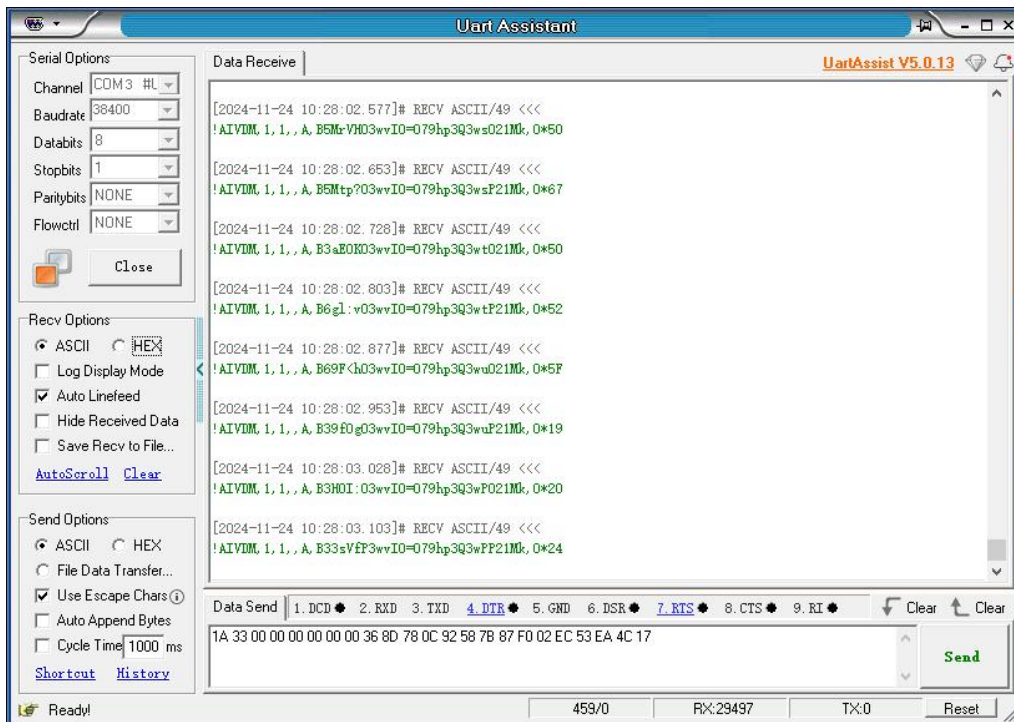
| No. | Name      | Configuration |
|-----|-----------|---------------|
| 1   | Baud Rate | 38400         |
| 2   | Data Bits | 8             |
| 3   | Parity    | none          |
| 4   | Stop Bits | 1             |

## 5. USB Connection

By using a USB-TypeB cable, the AIS-RUS01 can be connected to a computer. The computer's device manager will recognize a new COM port.



Enter the connection information for the COM port in the serial port debugger, and once connected, data can be received.

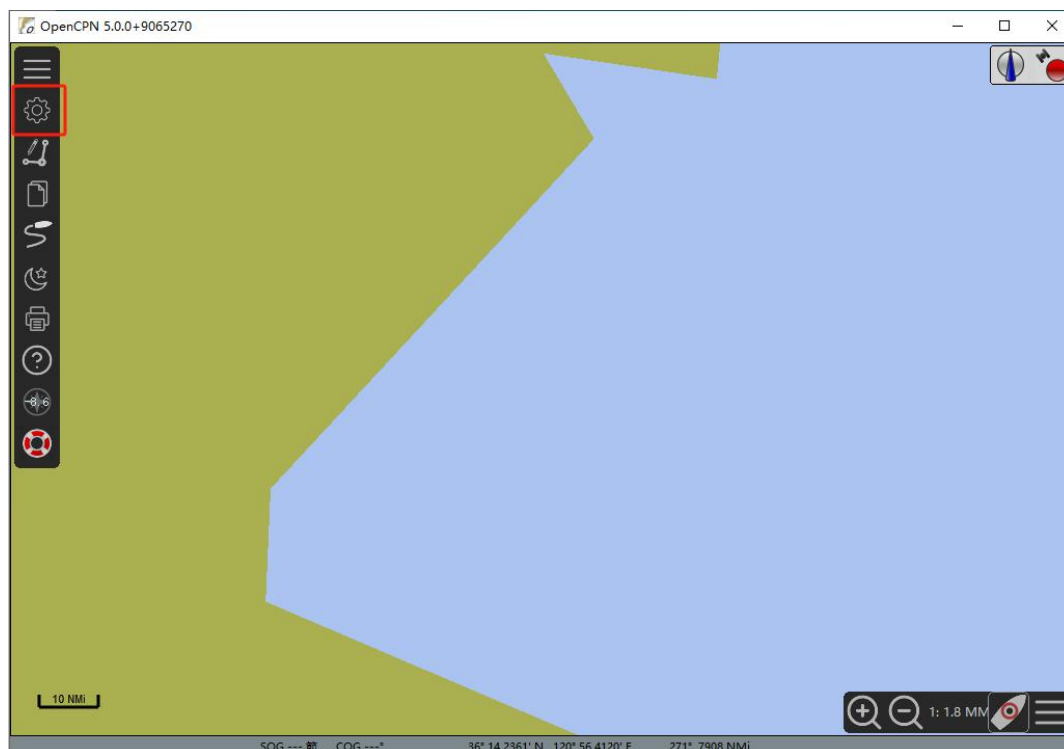


## 6. Serial Port Connection

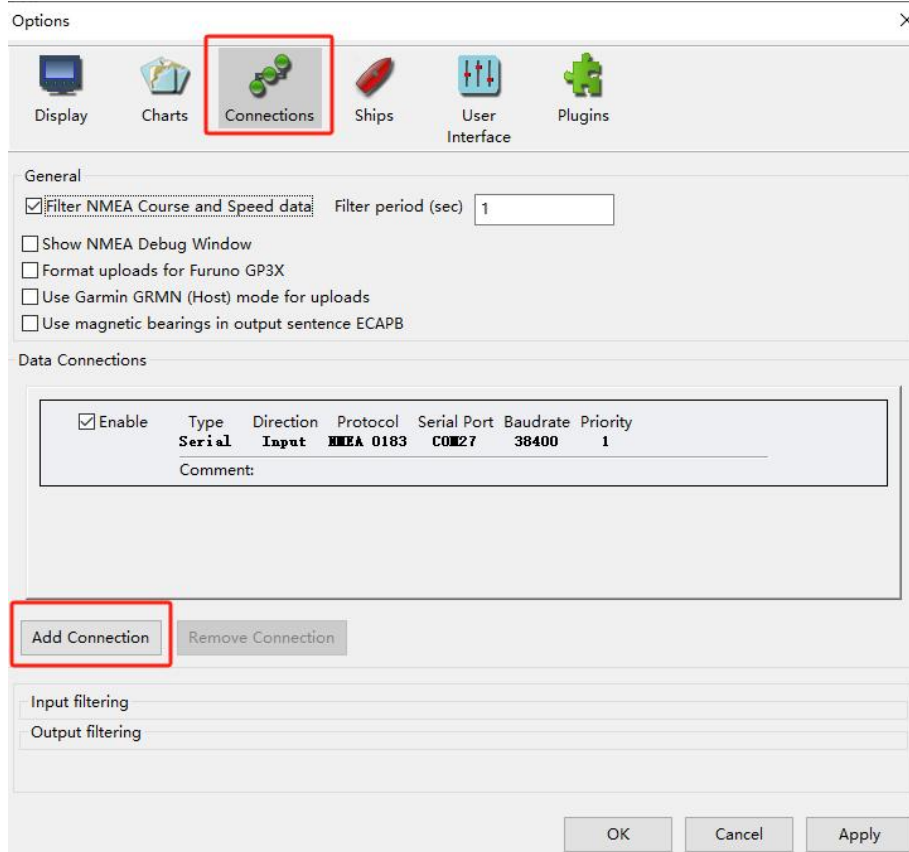
The AIS-RUS01 supports data transmission via serial connection. The default output protocol is RS232. If RS485 output is required, please contact us in advance for configuration. If RS422 or TTL output protocol is needed, please contact us in advance for customization.

## 7. Display Software

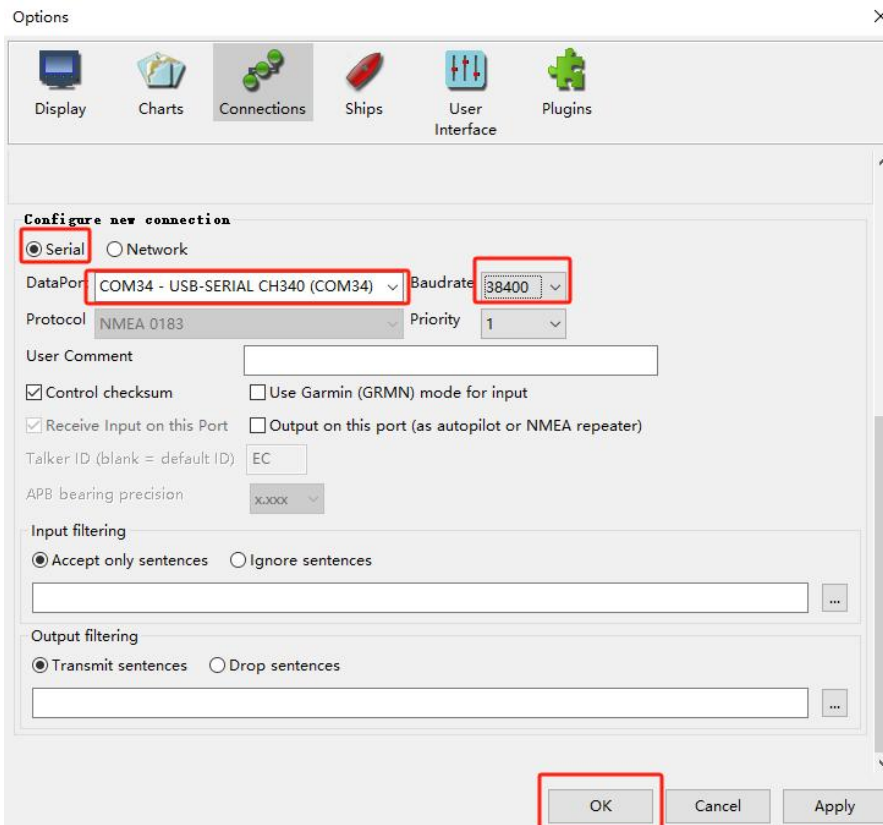
You can use the accompanying display software to show the received AIS data. Open the OpenCPN software and click the options button in the top-left corner.



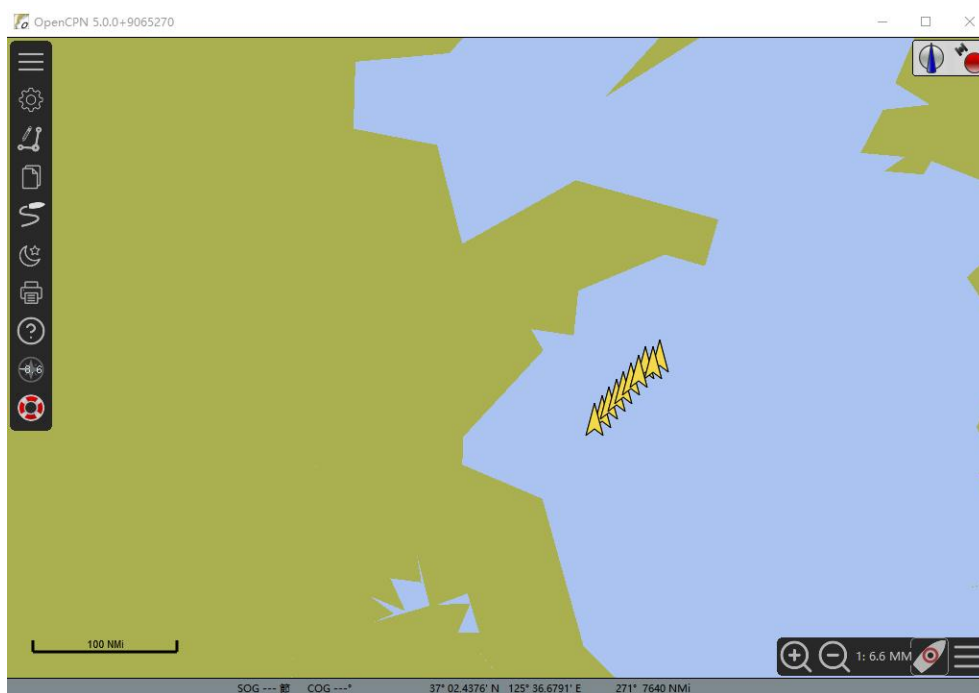
In the options window, click the "Connect" button, then click the "Add New Connection" button.



In the "Add New Connection" window, select "Serial Transmission," choose the correct COM port, set the transmission rate to 38400, and click "OK."



Move the map to your current location to display the data.



## 8. 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.