em-trak 430-0005

em-trak B923 Class B AIS Transceiver with VHF Splitter

Model: 430-0005

1. Introduction

The em-trak B923 is an advanced Class B Automatic Identification System (AIS) transceiver designed to enhance safety and situational awareness on the water. It transmits your vessel's position, speed, course, and other vital information to other AIS-equipped vessels and shore stations, while simultaneously receiving their data. A key feature of the B923 is its integrated VHF antenna splitter, which allows a single VHF antenna to be used for both the AIS transceiver and your existing VHF radio, simplifying installation and reducing antenna clutter.

This manual provides comprehensive instructions for the proper installation, configuration, operation, and maintenance of your B923 AIS Transceiver. Please read this manual thoroughly before attempting installation or operation.

2. Safety Information

Always observe the following safety precautions to prevent injury and damage to the equipment:

- Ensure the power supply is disconnected before making any electrical connections.
- Install the device in a dry location, protected from direct water exposure, unless specifically rated for outdoor use.
- Use only the specified power voltage and current. Incorrect power can damage the unit.
- Do not open the unit's casing. There are no user-serviceable parts inside. Opening the casing will void the warranty.
- Ensure proper ventilation around the unit to prevent overheating.
- Consult a qualified marine electronics technician for complex installations or if you are unsure about any step.

3. Package Contents

Carefully unpack the box and verify that all items are present and in good condition. If any items are missing or damaged, contact your dealer immediately.

- em-trak B923 Class B AIS Transceiver
- Power/Data Cable
- GNSS (GPS) Antenna
- Mounting Hardware (screws, template)

- Quick Start Guide (or link to full manual)

4. Product Overview

The em-trak B923 is designed for ease of installation and reliable performance. Below are images illustrating the device and its connection ports.



Figure 4.1: Top view of the em-trak B923 AIS Transceiver. This view shows the compact, robust design with the em-trak logo and status indicators.



Figure 4.2: Rear view of the em-trak B923 AIS Transceiver, detailing the power/data (POWER/0183) and NMEA 2000 connectivity ports. These ports are crucial for integrating the device with your vessel's electrical system and navigation network.



Figure 4.3: Rear view of the em-trak B923 AIS Transceiver, highlighting the coaxial connections for the main VHF antenna (ANTENNA), the VHF radio (VHF RADIO), and the external GNSS antenna (GNSS). These connections enable the AIS functionality and the integrated splitter.

4.1. LED Indicators

The B923 features several LED indicators on its top surface to provide quick status feedback:

- **Power:** Solid green when the unit is powered on.
- **TX (Transmit):** Flashes green when an AIS transmission occurs.
- **RX (Receive):** Flashes green when AIS messages are being received.
- **Error:** Solid red or flashing red indicates a fault or warning. Refer to the Troubleshooting section.
- **GPS/GNSS:** Solid green when a valid GPS fix is acquired.

5. Setup and Installation

Proper installation is critical for optimal performance of your B923 AIS Transceiver.

5.1. Mounting Location

Choose a mounting location that is:

- Dry and protected from direct spray or submersion.
- Easily accessible for wiring and status checks.
- At least 0.5 meters (1.6 feet) away from compasses.
- Allows for adequate ventilation around the unit.

5.2. Mounting the Unit

1. Use the provided mounting template to mark the drill holes.
2. Drill pilot holes suitable for the mounting screws.
3. Secure the B923 to the chosen surface using the supplied screws.

5.3. Electrical Connections

Ensure the vessel's power is OFF before making any connections.

- **Power:** Connect the red wire from the power/data cable to the vessel's 12V or 24V DC positive supply, and the black wire to the negative/ground. It is recommended to install an appropriate fuse (e.g., 2A) in the positive line.
- **NMEA 0183:** If connecting to NMEA 0183 devices (e.g., chartplotter), connect the NMEA 0183 data wires from the power/data cable to the corresponding input/output ports on your navigation equipment.
- **NMEA 2000:** Connect the NMEA 2000 port on the B923 to your vessel's NMEA 2000 backbone using a standard

NMEA 2000 drop cable. Ensure the backbone is properly terminated and powered.

5.4. Antenna Connections

- **VHF Antenna (ANTENNA port):** Connect your main VHF antenna to the 'ANTENNA' port on the B923. This is the antenna that will be shared by both the AIS and your VHF radio.
- **VHF Radio (VHF RADIO port):** Connect your VHF radio to the 'VHF RADIO' port on the B923. The integrated splitter will manage the signal between the single antenna and both devices.
- **GNSS Antenna (GNSS port):** Connect the supplied GNSS (GPS) antenna to the 'GNSS' port. Mount the GNSS antenna in a location with a clear, unobstructed view of the sky for optimal satellite reception.

6. Operating Instructions

Once installed and wired correctly, operating the B923 is straightforward.

6.1. Powering On

Apply power to the B923 via the vessel's electrical system. The 'Power' LED should illuminate solid green. The unit will begin its self-test and acquire a GNSS position fix.

6.2. Initial Configuration (MMSI Programming)

Before the B923 can transmit, it must be programmed with your vessel's unique Maritime Mobile Service Identity (MMSI) number. This is typically done using a PC connected to the B923 via USB or NMEA 2000, running the em-trak configuration software. The MMSI can only be programmed once by the user. Subsequent changes require a dealer.

6.3. Normal Operation

Once powered on and programmed, the B923 will automatically:

- Acquire a GNSS position fix (indicated by a solid green 'GPS/GNSS' LED).
- Transmit your vessel's AIS data (indicated by flashing 'TX' LED).
- Receive AIS data from other vessels (indicated by flashing 'RX' LED).
- Pass VHF radio signals through the integrated splitter to your VHF radio.

Monitor the LED indicators for normal operation. If an 'Error' LED illuminates, refer to the Troubleshooting section.

7. Maintenance

The em-trak B923 is designed for minimal maintenance. However, regular checks can ensure continued reliable operation.

- **Cleaning:** Wipe the unit with a soft, damp cloth. Do not use harsh chemicals or abrasive cleaners.
- **Cable Inspection:** Periodically check all cables and connections for signs of wear, corrosion, or damage. Ensure connections are secure.
- **Antenna Check:** Ensure the GNSS and VHF antennas are securely mounted and have clear views of the sky/horizon.
- **Firmware Updates:** Periodically check the em-trak website for available firmware updates. Updates can improve performance and add new features. Follow the instructions provided with the update carefully.

8. Troubleshooting

If you encounter issues with your B923, consult the table below for common problems and solutions.

Problem	Possible Cause	Solution
No Power LED	No power supply; Blown fuse; Loose connection.	Check power cable connections; Check vessel's fuse panel; Replace fuse if necessary.
Error LED is Red	Internal fault; Antenna issue; No MMSI programmed.	Check antenna connections; Ensure MMSI is programmed; Power cycle the unit. If error persists, contact support.
No GPS/GNSS Fix (LED off/flashing)	GNSS antenna not connected; Obstructed view of sky; Faulty antenna.	Ensure GNSS antenna is securely connected; Relocate antenna to clear view; Test with a known good antenna if possible.
No AIS Transmissions (TX LED not flashing)	No MMSI programmed; No GPS fix; Antenna issue.	Program MMSI; Ensure GPS fix is acquired; Check VHF antenna connection.
VHF Radio not working with splitter	Incorrect connection; Faulty splitter.	Ensure VHF radio is connected to 'VHF RADIO' port and main antenna to 'ANTENNA' port.

9. Specifications

Detailed technical specifications for the em-trak B923 AIS Transceiver.

Feature	Specification
Model Name	430-0005
Manufacturer	em-trak
AIS Class	Class B (2W CSTDMA)
Integrated Splitter	Yes, for VHF Antenna
Dimensions (L x W x H)	7.24 x 6.73 x 5.75 inches (Package)
Weight	1.01 Kilograms
Material	Plastic
Color	Multi-coloured
Special Feature	Portable
Connectivity	NMEA 0183, NMEA 2000, USB (for configuration)
GNSS Receiver	Internal with external antenna port
UPC	672975210526

10. Warranty Information

The em-trak B923 AIS Transceiver comes with a manufacturer's warranty against defects in materials and workmanship. The specific terms and duration of the warranty are detailed in the warranty card included with your product or available on the em-trak official website. Please retain your proof of purchase for warranty claims.

11. Support

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact em-trak customer support or visit the official em-trak website. You may find additional resources, FAQs, and software downloads online.

Website: www.em-trak.com

Email: Refer to the website for contact details.

Phone: Refer to the website for contact details.

© 2023 em-trak. All rights reserved.
Information in this manual is subject to change without notice.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question