

LOW COST
HIGH SENSITIVITY
DUAL AIS RECEIVER

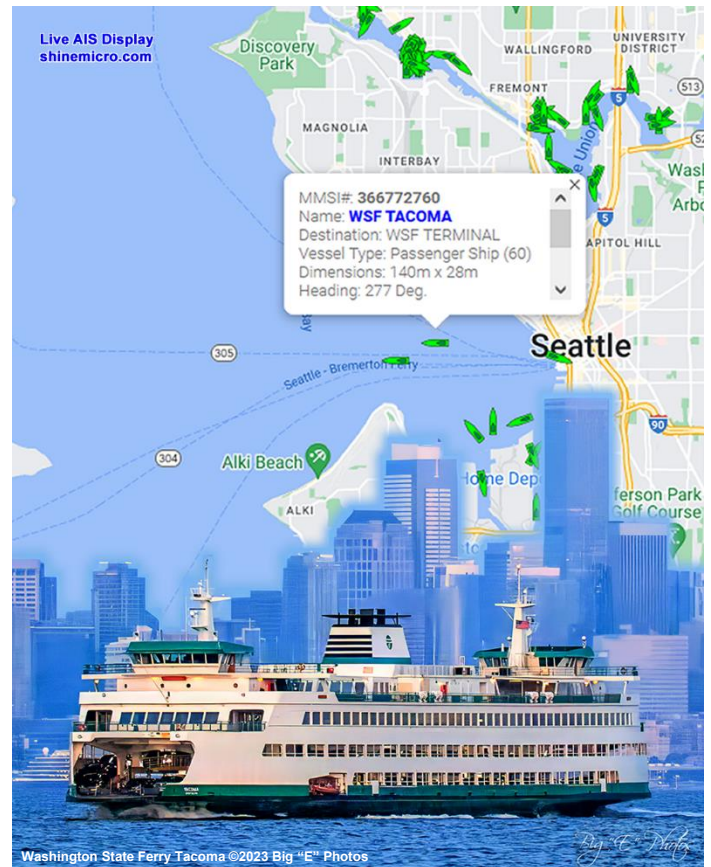
The RadarPlus® SM161R-2 is a low cost, high sensitivity dual AIS Receiver.

An **Automatic Identification System**, or **AIS**, is an indispensable tool for navigation and safety at sea. Information gathered by the **SM161R-2** is more detailed than radar and enables the everyday boater to see what's coming long before it is in line of sight.

The rugged **SM161R-2** incorporates **increased sensitivity** and **dual stage RF input protection** to provide superior protection against near lightning strikes and high-power transmitters.

The RadarPlus® SM161R-2:

- Provides high-sensitivity AIS reception
- Receives Class A & B vessel reports
- Interfaces with a PC or chart-plotter
- Consumes less than 1 watt of power



Visualization of AIS Vessel Identification
Composite photo overlaid on Live AIS Display from shinemicro.com

AIS REPORTS

- | | |
|---------------|------------|
| • Vessel Name | • Course |
| • Size | • Cargo |
| • Position | • And More |

OPTIONAL FEATURES

- Received Signal Strength Indication
- Ambient Noise Measurement
- Partial Packet Reception
- Packet Time of Arrival
- Slot Numbering
- VDL Loading



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System Specifications

- **Designation:** Automatic Identification System (AIS) Receiver
- **Serial RS232 connector:** DB9 female
- **Serial Data Baud Rate:** 38.4 Kbps
- **Power Supply:** 12 to 20 V nominal or 120 – 240 V AC
- **Power Consumption:** Less than 1 watt
- **Power Connector:** jack for Ø5.5 x Ø2.1 mm DC plug
- **Temperature Range:** -15 to +55 degrees C
- **Compass Safe Distance:** 1 meter

Navigation Specifications

- **12 channel internal Global Positioning System (GPS) *OPTIONAL***
- **GPS antenna connector:** SMA female

Dimensions and Weights

- **Length:** 6.89 in
- **Width:** 3.15 in.
- **Height:** 2.25 in.
- **Weight:** ≤2 lb.

Frequencies and Channel Bandwidth

- **RX AIS1:** 161.975 MHz at 25 kHz
- **RX AIS2:** 162.025 MHz at 25 kHz

AIS Receivers

- **AIS Data Rate:** 9,600 bps
- **Sensitivity:** ≤20% PER @ -113 dBm
- **Adjacent Channel Rejection:** 70dB at 25 kHz
- **Blocking:** 80 dB
- **Intermodulation:** 65 dB
- **Large Signal PER:** 1% or less
- **Image Rejection:** ≥ 70 dB for 20% PER
- **Spurious Rejection:** ≥ 70 dB for 20% PER
- **Antenna Connector:** Type N female

Optional: Enhanced Signal Analysis Package

Enhanced sensitivity with analysis features including:

- Received Signal Strength Indication
- Slot Numbering
- VDL Loading
- Ambient Noise Measurement
- Packet Time of Arrival
- Partial Packet Reception


Serial Interface Details

The serial interface of the SM161R-2 conforms to ITU-R M 1371-5 and NMEA 0183 HS with additional proprietary sentences.

To request the full serial interface specifications, please e-mail info@shinemicro.com

Software

The **SM161R-2** allows AIS-enabled software to chart ship positions and descriptions in real-time. The output of **SM161R-2** conforms to the international standards listed above and is compatible with all software meeting such standards.

Shine Micro is an authorized dealer of Coastal Explorer by Rosepoint Navigation. Coastal Explorer is designed for recreational boaters and is sophisticated, full-featured, and easy to use. Please contact Shine Micro for a fully-functional 10-day free trial.

Simple Installation

1. Mount the SM161R-2 per the mounting diagram.
2. Connect the power cable to a 12-volt power source.
3. Connect a VHF antenna to the Type N connector on the SM161R-2.
4. Connect the serial interface cable to a PC or other AIS display device.



POWER DATA AIS ANT. GPS ANT.

Shine Micro, Inc. 

WARRANTY INFORMATION

Shine Micro warrants its products to be free from defects for one full year from the date of purchase. Shine Micro will, at its sole discretion, repair or replace any components that fail in normal use. Labor and material costs for such repairs or replacement will be free of charge. This warranty does not cover failures due to abuse, misuse, accidents, or unauthorized alterations or repairs.

