



SHINE MICRO

RADARPLUS® SM161R-2

LOW COST

HIGH SENSITIVITY

AIS RECEIVER



The RadarPlus SM161R-2 dual AIS receiver provides:

- High-sensitivity AIS data reception
- Affordable low price
- Hears Class A & B vessel reports
- Sends the information to be mapped on a PC or chart-plotter
- Less than 1 watt power consumption

AIS REPORTS:

- Vessel Name
- Size
- Position
- Course
- Cargo
- and More

OPTIONAL FEATURES:

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

NEW AND IMPROVED:

- Dual Stage RF Input Protection
- Increased Sensitivity

The rugged, industry standard SL161R has now been improved; incorporating increased sensitivity and dual stage RF input protection to provide superior protection against near lightning strikes and high power transmitters.

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





RadarPlus[®] SM161R-2

Low Cost, High Sensitivity AIS Receiver

System Specifications

- **Designation:** Universal Automatic Identification System (AIS) Receiver
- **Serial RS232 interface:** female DB9 connector, see below for additional serial interface details
- **Power Supply:** 9 to 20 V nominal
- **Power Consumption:** Less than 1 watt
- **Temperature Range:** -15 to +55 degrees C.
- **Compass Safe Distance:** 1 meter

Navigation Specifications

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

Dimensions and Weights

- **Width:** 3.15 in.
- **Length:** 6.89 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 bits/s
- **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 Interface:** female Type N connector

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 RadarPlus is a subset of IEC specification 61993-2, using a 38.4 kbps connection to a host computer. The received AIS messages are output using the VDM sentence, and GPS location data is output using the NMEA 0183 sentences.

To request full serial interface specifications, please e-mail info@shinemicro.com or call Shine Micro at (360) 437-2503.

Software Tested

The RadarPlus allows AIS enabled software to chart ship positions and descriptions in real-time. The following packages have been tested and are fully operational with the SM161R-2:

- Rose Point - **Coastal Explorer**
- ICAN - **Regulus**
- Transas - **NaviSailor**
- Xanatos - **Titan**
- Nobeltec - **Admiral**
- EuroNav – **seaPro**
- Chyna Sea – **MapTech**

Simple Marine Installation

1. Mount the SM161R-2 according to the provided 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. Optionally connect the serial interface cable to a PC or other AIS display device.

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.

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