



SHINE MICRO

# RADARPLUS® SA161-MH

COMPACT HIGH SENSITIVITY AIS RECEIVER

**INTRODUCING THE RADARPLUS SA161-MH:** an enhanced AIS receiver with industry-leading sensitivity in a compact, aviation Dzus-rail mounted form factor.



High-Sensitivity for Maximum Range AIS Reception



Low Power Consumption of Less Than 3 Watts



Exclusive Shine Micro ESP Software Standard



Mil-Spec Construction



Type I Dzus Rail Mount



**Airborne AIS Receivers** drastically enhance the coverage range of AIS surveillance and monitoring. This increase in range is a powerful aid to

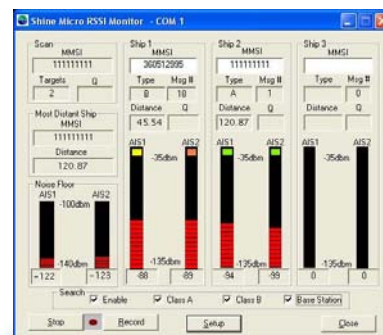
- Search and Rescue
- Environmental Protection
- National Security
- And More...

The RadarPlus SA161-MH serial data output provides the location and identification details of all AIS transponders within receiving range, and will drive most popular marine charting software packages and ECDIS available today.

Industry-leading tracking range is achieved through I/Q synchronous demodulator technology, demodulating AIS packets for superior reception of noisy, weak signals.

The SA161-MH also features the exclusive and proprietary Shine Micro RSSI Monitor, which is useful for:

- Assessing and troubleshooting performance
- Searching for and analyzing signals from specific vessels
- Position validation for anti-spoofing



Shine Micro RSSI Monitor



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U.S. Navy photo by Photographer's Mate 2nd Class William H. Ramsey



## COMPACT HIGH SENSITIVITY AIS RECEIVER

### System Specifications

- **Designation:** Dual AIS Receiver
- **Serial interface:** RS232
- **Power Supply:** 28 VDC isolated
- **Power Consumption:** Less than 3 watts
- **Temperature Range:** -15 to +55 degrees C.
- **Compass Safe Distance:** 1 meter

### Approximate Dimensions and Weights

- **Width:** 4.00 in. (5.75 in. including faceplate)
- **Length:** 6.00 in. (7.00 in. including connectors)
- **Height:** 1.120 in. (1.125 in. including faceplate)
- **Weight:** ≤ 1.25 lb
- **Face Plate:** 5.750 x 1.125"  
Type I Aircraft (SS7000-1)

### 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 (RF Input)
- **Sensitivity:** ≤20% PER @ -115 dBm
- **Co-channel Rejection:** -10 dB
- **Adjacent Channel Selectivity:** 70 dB
- **Blocking:** 84 dB
- **Intermodulation:** 74 dB
- **Large Signal PER:** 1% or better
- **Image Rejection:** 70 dB
- **Spurious Rejection:** 70 dB

### Enhanced Signal Analysis Package

Enhanced analysis features including:

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

### Serial Interface Details:

The serial interface of the RadarPlus conforms to ITU R M.1371-3 and NMEA 0183 V3.0 data format with additional proprietary sentences. The received AIS messages are output using the VDM sentence, and GPS location data is input using the NMEA 0183 sentences.

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

### Connectors

- **Power:** D38999 / 20WB98SA
- **Data:** D38999 / 20WB35SN
- **GPS Antenna:** TNC female
- **AIS Antenna:** Type N female

### Indicators

- NVIS Compatible Power/Status LED

### Standards Compliance

- MIL-Std-704F
- MIL-Std-810
- MIL-Std-461

### 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 repair.



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