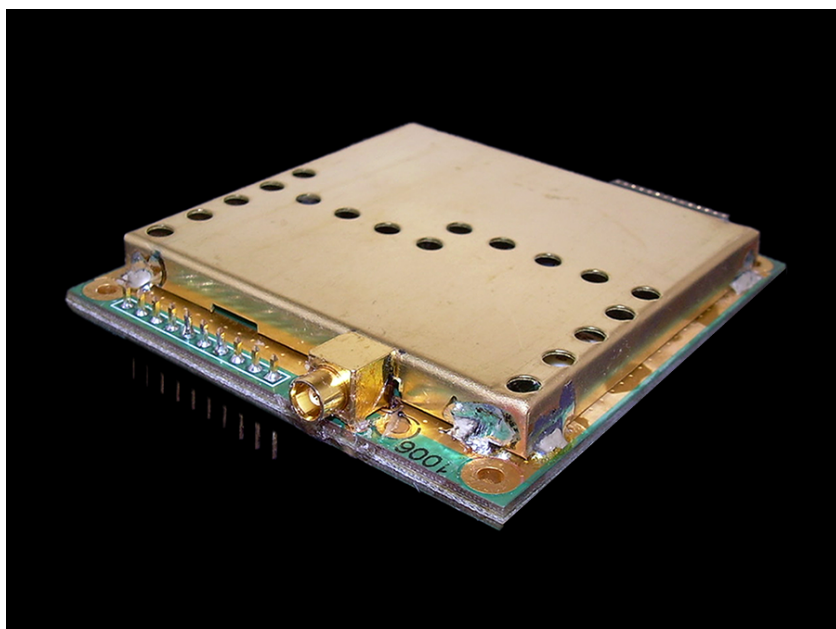




SHINE MICRO

RADARPLUS® SA161-UA

COMPACT HIGH SENSITIVITY DUAL AIS RECEIVERS



**INTRODUCING THE
RADARPLUS SA161-UA:**
an enhanced AIS receiver with
industry-leading sensitivity in a
compact, aviation-appropriate
form factor.

- **High-sensitivity, maximum range AIS reception**
- **Power consumption < 2 watts**
- **Shine Micro's proprietary ESP software standard**

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

Airborne AIS Receivers drastically enhance the coverage range of AIS surveillance and monitoring. This increase in range is a powerful aid in a variety of applications, including:

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

Industry-leading tracking range is achieved through **I/Q synchronous** demodulator technology, which demodulates AIS packets both forward and backward for **superior reception** of noisy, weak signals.

UPGRADEABLE

- **Future software upgrades** are easily installed through the serial port.
- **Time of Arrival (TOA)**
Detection and Time-stamping of packets for post-processing and future applications

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System Specifications

- **Designation:** Dual AIS Receiver
- **Serial interface:** RS232 9600 BPS GPS Input
- **Power Supply:** 9 - 16 VDC
- **Power Consumption:** Less than 2 watts
- **Temperature Range:** -15 to +55 degrees C.
- **Compass Safe Distance:** 1 meter

Approximate Dimensions and Weights

- **Width:** 2.44 in.
- **Length:** 2.75 in.
- **Height:** 0.50 in.
- **Weight:** ≤ 8 oz.

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
- **Antenna Interface:** MCX
- **I/O Interface:** 10 pin header, 0.1" spacing, "0.025" square posts

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

Service Life

- > 44,950 hr MTBF

Standards Compliance

- MIL-Std-810E

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 or call Shine Micro at (360) 437-2503.

Module I/O Connector Pin-Out

1. B+
2. NC
3. Interrupt (1 PPS input)
4. GND
5. UART1 TXD (GPS)
6. GND
7. UART1 RXD (GPS data input)
8. UART0 TXD (AIS data)
9. UART0 RTS
10. UART0 CTS

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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