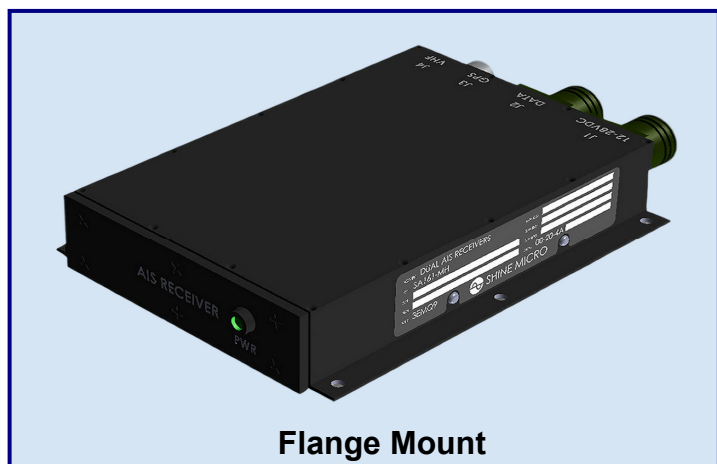


**MIL-SPEC****HIGH SENSITIVITY****AVIONICS AIS RECEIVER****Flange Mount****INTRODUCING THE  
RADARPLUS® SA161-MH:  
a dual AIS receiver for avionics.**

- **Industry-Highest Sensitivity:** PER  $\leq$  20% at -115 dBm
- **Ethernet Interface:** TCP/IP or UDP Configurations
- **MIL-Spec Construction and Certification**
- **Type 1 Aircraft Dzus Rail or Flange-Mount Standard**

The RadarPlus® SA161-MH is highly suitable for vessel tracking and maritime surveillance applications. The unit is a MIL-Spec solution that continuously operates from -40° C to +60° C and up to an altitude of 70,000 ft. The unit's **Industry-leading sensitivity and tracking range** are achieved through **I/Q Synchronous** demodulator technology, which demodulates AIS packets for **superior reception** of noisy, weak signals. The SA161-MH provides the **most sensitive AIS reception in the harshest of environments.**

**Type 1 Aircraft Dzus Rail Mount**

Enclosed by an **Alodined aluminum** case with **NVIS-compatible** paint, the SA161-MH is **corrosion resistant** and **light weight**, and includes a **non-flashing, NVIS-compatible** power LED. Mounting options include either a **Type 1 Aircraft Dzus Rail** or a **Flange mount**.

The SA161-MH features both an **Ethernet and RS-232 serial interface**, where both protocols may be utilized to receive data from the device simultaneously. The Ethernet module is **configurable as TCP/IP or UDP full duplex.**

**Additional Features Include:**

- **Low Power Consumption of 5-16 Watts**
- **Integrated 12-Channel GPS Receiver**
- **Superior RF Input Protection**
- **Exclusive Shine Micro Enhanced Signal Processing Software**

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**MIL-SPEC**
**HIGH SENSITIVITY**
**AVIONICS AIS RECEIVER**
**System Specifications**

- **Designation:** Dual AIS Receiver
- **Serial Interface:** Ethernet interface and RS232 output
- **Power Supply:** 12-28 VDC
- **Power Consumption:** Typical: 5 watts, Max: 16 watts
- **Temperature Range:** -40 to +60 degrees C
- **Altitude:** 0 to 70,000 ft.
- **Compass Safe Distance:** 1 meter

**Approximate Dimensions and Weights**

Type 1 Dzus Rail Mount\*      Flange Mount

<b>Max. Width</b>	5.750 in.	4.750 in.
<b>Max. Length</b>	7.301 in.	7.217 in.
<b>Max. Height</b>	1.125 in.	1.125 in.
<b>Weight</b>	≤ 1.25 lbs.	≤ 1.20 lbs.

\*Face plate: Type I Aircraft (SS7000-1) Dzus Rail

**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:** 9600 bits/s (RF Input)
- **Sensitivity:** PER ≤ 20% @ -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 Processing**

Enhanced processing 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 SA161-MH conforms to ITU-R M. 1371-3 and NMEA 0183 V4.0 data protocol with additional proprietary sentences. The received AIS messages are output using the VDM sentences. GPS position data is output using the NMEA 0183 sentences. Data is simultaneously output via RS232 and Ethernet. The Ethernet module is configurable as TCP/IP or UDP full duplex at a speed of 10 Mbps (10BASE-T).

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:** female TNC
- **AIS Antenna:** female Type N

**Indicators**

- NVIS-compatible Power/Status LED

**MIL Standards**

- MIL-Std-704A and F
- MIL-Std-461E
- MIL-Std-810E

**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.

