

RUGGED HIGH SENSITIVITY LONG RANGE DUAL AIS RECEIVERS

Proven Performance: the **SM1610-4** Long-Range Dual AIS receiver achieves **50 nm** coverage *minimum**. The **SM1610-4** is a cutting-edge tool for the expanding applications of **data on-demand**:

- Maritime Domain Awareness (MDA)
- Port and Traffic Management
- Search and Rescue
- Asset Tracking
- Efficiency Modeling
- Environmental Protection
- And More



Don't be limited by Line-of-Sight. Identifying non-compliant transponders is key to a healthy AIS environment and **actionable analytics**. The **SM1610-4** provides reception **beyond line-of sight**, without the delay and expense of a satellite subscription, and analysis tools to measure the health of the VDL and pinpoint suspect transponders.

*The SM1610-4 was selected by competitive bid and analysis by the United States Coast Guard (USCG) for the Nationwide Automatic Identification System (NAIS), which included a 50 nm coverage minimum requirement. The SM1610-4 has proven performance far exceeding the minimum. An optimized receiver installation is required to achieve advertised results. Contact Shine Micro at info@shinemicro.com today for a full site optimization consultation.

Features of the SM1610-4

- VDL Analysis Reports
 - Number of active slots per frame
 - garbled packets per frame
 - Packet collisions per frame
 - % VDL utilization
- Frequency deviation and slot timing (jitter) monitor
- High bandwidth 230.4 kbps serial connection
- Wide selection of serial port speeds
- PC configuration manager



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System Specifications

- **Designation:** AIS RX base station per ITU R M.1371-4
- **Serial interface:** RS232 (standard);
- **Baud Rates:** 38.4, 115.2, 230.4 kbps
Ethernet and IEC 61162 are optional
- **Power Requirements:** 12-30 VDC or 120-240 VAC
- **Power Consumption:** < 3 watts
- **Temperature Range:** -15 to +55 degrees C.
- **Compass Safe Distance:** 1 meter
- **Environmental:** IP64 Compliance

LNA Specification

- **Environmental:** IP67 & MIL-STD-810F 509.4
Salt fog compliant.
- **Connectors:** female Type N
- **Frequency:** 162 MHz
- **Noise Figure:** < 2 dB
- **Gain:** >20 dB
- **Power Supply:** Coax Bias, 5.5 VDC from Receiver
- **Multi-Stage input protection**

Navigation Specifications

- **12 channel internal Global Positioning System (GPS)**
- **GPS antenna interface:** female SMA connector
- **Serial interface timing:** UTC or Unix Time

Dimensions and Weights

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

Frequencies and Channel Bandwidth

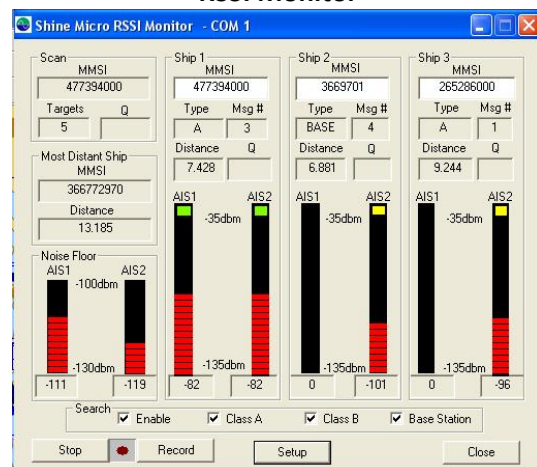
- **RX AIS1:** 161.975 MHz @ 25 KHz Bandwidth
- **RX AIS2:** 162.025 MHz @ 25 KHz Bandwidth

AIS Receivers

- **AIS RF Data Rate:** 9,600 bps
- **Sensitivity:** ≤20% PER @ -119 dBm
w/ SM1610-4 LNA
- **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:** female Type N connector
w/ LNA power

Additional Advanced AIS Features

- Received Signal Strength Indication (RSSI)
- Ambient Noise Measurement
- Packet Time of Arrival
- VDL Analysis Reports
- IMO1252 Inspection Tools
- NMEA 0183 V4.1 tag blocks including:
 - Grouping
 - Source
 - Destination
 - Line numbering
 - Unix time

RSSI Monitor

Serial Interface Details:

The serial interface of the SM1610-4 conforms to ITU R M.1371-4 and NMEA 0183 V4.1 with additional proprietary sentences.

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

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.

