

## Features

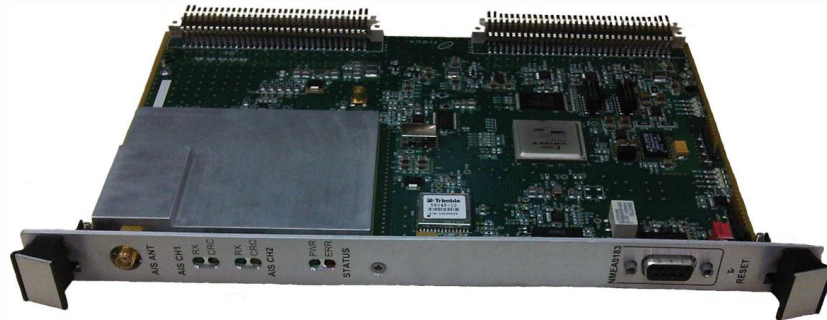
Harnessing the latest in Software-Defined Radio (SDR) technology, the AIS Receiver features:

- **Digital front-end:** Elegant design delivers excellent flexibility, dynamic range and robustness.
- **High-speed hardware-based digital signal processing:** The frequency-agile DSP tunes-in two AIS channels simultaneously. With superior channelization and adjacent channel rejection, it outperforms traditional analog approaches.
- **Powerful back-end Processor:** Provides high-level AIS processing, board supervision and other processing tasks that may be proprietary to your system.
- **Standard I/O:** NMEA0183 Data is exchanged via an RS232 port.

## Description

This customizable AIS Receiver supports land, aircraft and marine based applications. Developed for high-end radar systems and other applications requiring marine identification and tracking, the device delivers exceptional performance and flexibility.

- Designed for land, aircraft and marine based applications
- Fixed frequency, 2-channel Receiver (161.975 and 162.025MHz)
- Supports all AIS messages, per ITU M.1371-2
- 6U VME64(x) Form Factor (can be customized to others)
- Industrial temperature range operation (-30 to +55C)



*Fidus Systems AIS Receiver*

## Typical Applications

### Blending radar returns and AIS data

A unique and powerful Software Defined Radio (SDR), the Fidus AIS Receiver enables your system to fuse radar data by providing the required AIS information to your synthetic display.

### Stand-alone Automatic Identification System

Interfaces with any laptop or PC running common off-the-shelf display software to depict maritime traffic.

## Benefits

- **Customizable** — Easily re-targeted for your system.
- **Powerful** — On-board processor ensures that critical cycles are not taken from your Host Processor.
- **Flexible** — Choose from several I/O ports, manually set parameters specific to your application, or completely modify the RF digital processing to meet future AIS requirements.
- **Faster time-to-market or product development cycles** — You can shorten your time-to-market or product development cycles by using Fidus' leading-edge AIS Intellectual Property.
- **Support** — Fidus is an electronic product design company with many years of assisting customers in meeting their product development needs. Fidus will support the integration of the Fidus Receiver into your system. Alternatively, Fidus' depth of expertise in AIS means it can assist customers with any design issues they are experiencing with their AIS devices.

## About Fidus

Fidus Systems Inc. develops electronic products for a wide range of industries including aerospace, defence, consumer, medical, industrial, semiconductors and telecommunications. Fidus has extensive design experience in turnkey product development and technical knowledge in:

- System Design & Architecture
- Wireless/RF Design
- Signal Integrity/EMC
- Hardware Design
- PCB Layout
- DSP/FPGA/CPLD Design
- Software/ Firmware Design
- Industrial/Mechanical
- Prototype Design & Testing
- Regulatory Compliance
- Environmental and Reliability
- RoHS Compliance
- Component Obsolescence
- Cost Reduction

Fidus offers clients greater flexibility and capability in their product development with access to the expertise, process and tools to transform their concepts to products. Fidus has delivered on more than 750 products and projects for 180 customers across North America. For more information, visit [www.fidus.com](http://www.fidus.com)

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## Fidus AIS Receiver Specifications

The Fidus AIS Receiver employs under-sampling DSP techniques to implement a multi-channel, GMSK/FSK receiver. The embedded processor handles AIS protocol and message processing as well as the user interface.

### AIS Receiver Design Targets

Operational Frequency:	161.975 and 162.025MHz
Bit Rate:	9600bps
Sensitivity (<20% PER):	better than -107dBm
Co-Channel Rejection:	better than -10dB
Adjacent Channel Selectivity:	better than 70dB
Spurious Response Rejection:	better than 70dB

## Related Standards

### Interface/Form Factor

NMEA 0183  
NMEA 0183-HS  
IEC 61162-1  
IEC 61162-2  
ANSI/VITA 1.1-1997 (R2003)

### Airborne/Environmental

Subset of D0160-E

### AIS Specific

IEC 61993-2  
ITU-R M.1371-2

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