

# AIT250 Class B AIS Transponder

**Be Safe, Be Seen, Be Sure...**

**The SMARTERTrack AIT250 - Your eyes and voice at sea**



- Full CLASS B AIS transponder compliant to IEC62287-1 and CE0168
- Sends and receives AIS data so your position, course, speed, heading and identity are transmitted to other AIS users as well as receiving other CLASS A and CLASS B data transmissions for viewing on a compatible plotter or PC charting system
- Built in GPS - provides compatible devices with a position data feed
- Built in dual channel receiver with NMEA/RS232 output for connection to compatible plotter or PC charting system
- Silence mode switch - turn off the transponder if appropriate
- Supplied complete with GPS antenna and VHF antenna and suitable for DIY installation
- Measures just 190 x 175 x 91mm
- 12V DC (9.6-15v) operation. Average power consumption 4W
- Built in integrity testing for constant monitoring and easy to view LED status lights
- Optional distress function with safety related message (SRM) capability



## What is AIS?

The marine Automatic Identification System (AIS) is a location and vessel information reporting system. It allows vessels equipped with AIS to automatically and dynamically share and regularly update their position, speed, course and other information such as vessel identity with similarly equipped craft. Position is derived from a GPS system and communication between vessels is by VHF digital transmissions (on channels specifically allocated within the normal marine VHF spectrum). A sophisticated and automatic method of time sharing the radio channel is used to ensure that even where a large number of vessels are in one location, blocking of individual transmissions is minimised with any degradation of the expected position reporting interval indicated to the user. Even if the unit suffers extreme channel overload conditions it will always recover to normal operation.

There are two classes of AIS unit fitted to vessels - Class A and Class B. In addition, AIS base stations may be employed by the Coastguard, port authorities and other authorised bodies. AIS units acting as aids to navigation (A to Ns) can also be fitted to fixed and floating navigation markers such as channel markers and buoys. Class A units are a mandatory fit under the safety of life at sea (SOLAS) convention to vessels above 300 gross tons or which carry more than 11 passengers in International waters. Many other commercial vessels and some leisure craft also fit Class A units.

Class B units are currently not a mandatory fit but authorities in several parts of the world are considering this. Class B units are designed for fitting in vessels which do not fall into the mandatory Class A fit category. The Digital Yacht SMARTERTrack AIT250 is a Class B unit.

## Connect to a plotter or PC to view AIS targets...

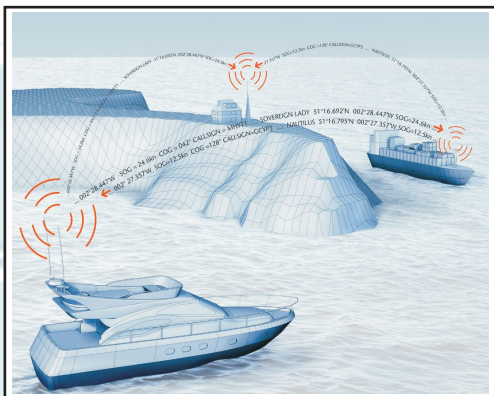
Here we see dredger "Dolphin" operating in Avonmouth docks, destination Port Talbot. The data bar at the bottom of the screen shows vessel data including position, course speed and closest point of approach based on your current heading data. Amazing! That's AIS.

AIS: UKD DOLPHIN		Lock	Find	Last Contact: 03 seconds			
CPA	16.275 nm	Range	59.088 nm	COG	244 T	Latitude	51 29.877 N
TCPA	31:39:37	Bearing	079 T	SOG	1.8 kts	Longitude	002 43.859 W

**More Info**  
 Name: UKD DOLPHIN  
 Call Sign / IMO Number: MJAR3 / 8325250  
 Type: WIG - Engaged in dredging or underwater operations  
 Status: Under way  
 Rate of Turn: Unknown  
 Destination: PORT TALBOT

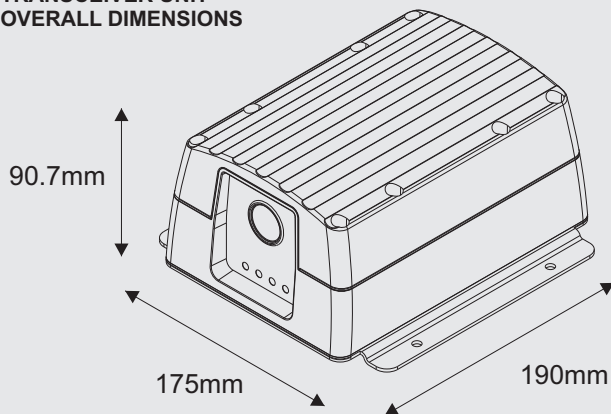
Hook up the AIT250 to an on board PC or plotter compatible with AIS data and you'll get a detailed overlay of all targets within range onto the display. See the vessels position, course, speed, heading, previous track, length, beam and identity (MMSI, callsign and name).

Class A systems may also show IMO number (if known), navigational status, rate of turn, draught, cargo type, destination and safety related messages. Many systems can then calculate CPA (closest point of approach) and TCPA (time to CPA) for a selected target. AIS systems offer ranges of up to 20-50 miles - typically similar to the maximum ranges expected from normal VHF voice communications. AIS systems complement radar and plotter systems with positive target identification and greatly improve ship safety and security with reduced risk of collision.



# SPECIFICATIONS

## TRANSCIVER UNIT OVERALL DIMENSIONS



## PACKAGE CONTENTS

- AIT250 Transponder Unit
- Power/PC/Data Cable - Fitted with internal thermal reset fuse and bare ended power/nmea connections and fitted 9 pin D type PC serial connector
- HA156A AIS Tuned VHF Stub antenna, 20m coax and BNC connector
- CEL GPS Patch antenna, 10m cable and TNC Connector
- AIS Pro Configuration/Viewing software
- Installation and Operation Manual

WEIGHT: 1450g

## GENERAL SPECIFICATION

OPERATING VOLTAGE 10.8 TO 15.6 V DC  
 OPERATING POWER Typical average 4W  
 Max current consumption 2A  
 INTERFACES Bi-directional RS232 for PC  
 RS422 NMEA0183 38400 baud  
 CONNECTORS GPS Ant (TNC) & VHF Ant (BNC)  
 INDICATORS Combination PC/NMEA/Power cable  
 USER CONTROLS Power/TX Timeout/Status/SRM Sent  
 Programmable SRM (sends preset distress message) or SILENCE button  
 RECEIVER -107dBm (Dual Channel)  
 TRANSMITTER 33dBm (typical 2W)  
 COMPATIBILITY Compatible with most leading brands of plotter/Radar supporting an AIS overlay including Garmin, Furuno, Raymarine, Standard and Northstar  
 ANTENNAS Miniature GPS patch antenna supplied  
 Heliflex tuned AIS antenna supplied



Compatible plotters and radars will generally overlay AIS targets onto their screen and provide a list of received targets together with calculations and alarms for CPA and TCPA

## AIS BENEFITS

- **"See and be seen"** - A Class B transponder continuously receives information from all Class A and Class B equipped vessels around you and displays this information on your standard chart plotter or PC. At the same time your Class B will transmit your position to all AIS equipped vessels automatically.
- **Safety at night and in poor weather conditions** - The class B AIS is a vital navigation tool in poor visibility conditions. The information received from other AIS 'targets' provides the user with vital navigation information and the position transmission alerts other vessels to the users location.
- Combined with radar, AIS gives you the best possible picture of your situation in all conditions
- Safety in high traffic / commercial shipping areas
- Position transmission to authorities / nearby vessels in case of emergency
- Best possible picture of a dynamic environment (moving vessels)
- Graphically view your position in relation to other vessels when connected to suitable display
- Ability to 'see around the corner'
- Track vessels of interest such as friends/ colleagues
- Positively identify targets and easily establish ID/Name to enable voice and DSC communication
- Establish track and rate of turn, closest point of approach (CPA), time to CPA (TCPA) and target heading data
- Programmable distress function button sends preset MAYDAY message

## FACT!

All commercial ships over 300GRT are mandatorily required to carry a Class A AIS Transponder. Navigators on commercial ships are becoming increasingly reliant on this technology as it makes CPA and TCPA calculations simple and reliable

## FACT!

AIS positively identifies targets with call sign, name and MMSI information so it's easy to make a VHF voice or DSC call to clarify a vessel's intentions on a potential collision course

## FACT!

AIS target data can often be gathered where radar data can't - like around headlands, bends or islands. That's thanks to the use of VHF frequencies for transmissions which means AIS targets can be tracked even at 30-40 NM.

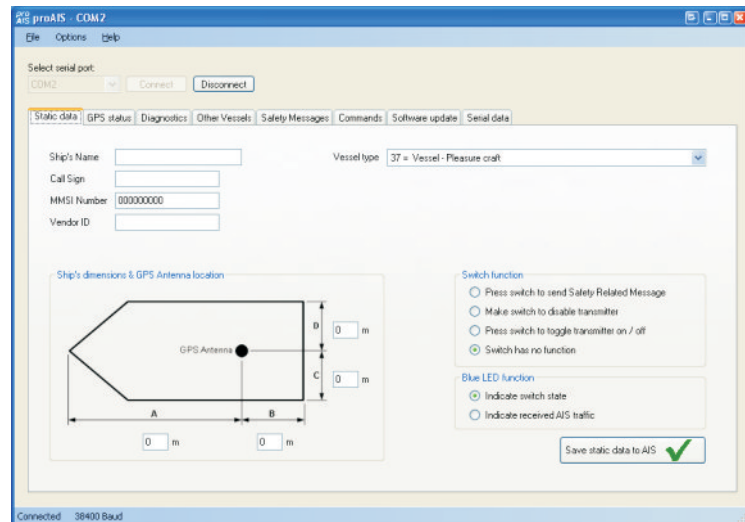
## FACT!

The built in GPS incorporated in the AIT250 will act as a 2nd positioning source for most on board systems. Plus! Even without a plotter connection, the AIT250 will continually output your information for other AIS users

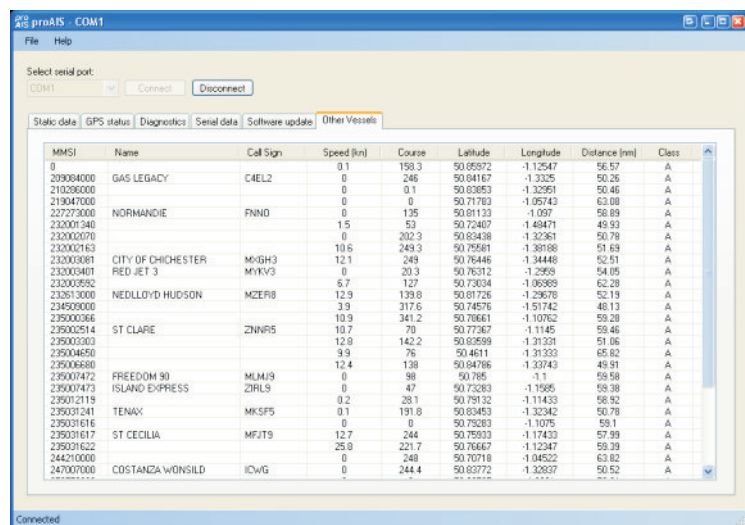
## AIS TECHNOLOGY - BE SAFE! BE SURE! BE SEEN!

### proAIS SOFTWARE

The AIT250 requires programming with your vessel details such as beam, length and draft as well as name and MMSI identity prior to operation. Every unit ships with proAIS - an easy to use PC program allowing you to set up the unit with a serial connection to a compatible PC. Alternatively, your dealer will do this for you. Once programmed, no further set up is required. Just leave powered up whilst underway, safe in the reassurance that you're now part of the AIS data network and positively identifiable and visible to commercial ships and other AIS users.



proAIS also features a basic display of AIS targets within range and a diagnostic and GPS monitoring program which can be used in real time if the AIT250 is left connected to an on board PC.



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