



Class B AIS Features, requirements and IEC standards



Class B units operate using Carrier Sense Time Division Multiple Access (CSTDMA). The unit transmits to find a free time slot and then sends its information in the available space. CSTDMA does not reserve a future time slot, but relies on finding free slots while scanning the slot map. As Class A units take priority over Class B ones, they can reserve a slot resulting in a potential loss of Class B data. As well as transmitting data, CSTDMA devices also receive when to transmit data and information from other ships, AtoNs or base stations.

CSTDMA type devices are regarded as 'polite' devices as they scan for available slots and send their data into free space. They use both spare time slots and, to utilise the AIS slot map as efficiently as possible, use any available space in slots reserved by class A devices.

Class B units contain the same amount of receivers and transmitters as Class A, but they are used slightly differently. The VHF receivers are designed for CSTDMA; one of the two must be multiplexed with the VHF DSC receiver. The unit also includes an active GPS antenna as standard. As the units are not interfaced with a compass, heading information is rarely transmitted. Class B devices transmit at 2W, giving a range of between 8-10 miles

Requirements

- 2W transmission power
- One transmitter
- Two receivers
- One of the receives must be multiplexed with the VHF DSC receiver
- Flexible reporting rate depending on voyage status (2 seconds to 3 minutes)
- CSTDMA transmission type
- Variable connection interfaces
- Active GPS antenna
- LEDs to show the status of the device

Standards

Health:

EN 50384: 2002 for occupational exposure to electromagnetic fields
 EN 50385: 2002 for general public exposure to electromagnetic fields
 EN 50383: 2002 which is referenced by EN 50384: 2002 and EN 50385: 2002
 EN 62311: 2008 for human exposure to electromagnetic fields

Safety:

EN 60950-1: 2006/A11:2009, relevant sections not addressed by
 IEC 60945: 2002-08
 IEC 60945: 2002-08

For Article 3.1(b) [EMC]:

EN 301 843-1 v1.2.1 (2004-06)
 IEC 60945: 2002-08

For Article 3.2 [Spectrum Usage]:

IEC 62287-1: 2010-11 Clause 11, for the AIS transmitter and receivers

IEC 62287-1: 2010-11 Annex C, Clause C4, for the DSC receiver
 IEC 61108-1: 2003-07 Clauses 4.3.7 & 4.3.8, for the GPS receiver

For Article 3.3(e) [Access to emergency services]:

IEC 62287-1: 2010-11 Clause 9, for operation in intended environment
 IEC 62287-1: 2010-11 Clauses 10, 12, 13 for operational requirements