



Class A transceivers

Device features, requirements and IEC specifications



Class A AIS transceivers are designed for large, ocean going, vessels on international voyages. In 2002 the IMO regulations stated that vessels over 300 gross tonnes or passenger ferries carrying more than 150 passengers on international voyages must carry a Class A AIS device to aid collision avoidance.

Class A units use Self-Organised Time-Division Multiple Access (SOTDMA) to send their data. Units transmit to locate a vacant time slot reserve it, transmit the data and reserve the next time slot automatically. Class A units receive as well as transmit data, receiving when to transmit their own data, as well as receiving data from other ships, AtoNs or base stations and when their next reserved slot is in the AIS slot map.

Class A units have one VHF transmitter, two VHF TDMA receivers and one VHF Digital Selective Calling (DSC) receiver. Class A units must also include links to the shipboard display and sensor systems via standard marine electronic communications. The unit primarily uses GPS, LORAN, Glonass or an internal navigation system to determine its position. The unit connects to shipboard systems through data connections, eg. NMEA 0183/2000/USB, to display information received through AIS.

Requirements

- 12.5W transmission power
- Six serial interfaces
- Large screen for viewing targets
- Mini keyboard display
- Enhanced environmental protection
- Pilot plug
- Flexible reporting rate depending on voyage status (2 seconds to 3 minutes)
- SOTDMA and RATDMA transmission type
- three receivers (2 X AIS 1 X DSC)

Standards

EMC

- IEC 60945: 2002-08, Clause 9 for electro magnetic emissions
- IEC 60945: 2002-08, Clause 10 for immunity to electromagnetic environment

Environmental

- IEC 60945: 2002-08
- IEC 61993-2: 2001-12
- IEC6

Power Supply

- IEC 60945: 2002-08
- IEC 61993-2: 2001-12

Safety

- IEC 60945: 2002-08
- IEC 61993-2: 2001-12

Special Purpose Requirements

- IEC 60945: 2002-08
- IEC 61993-2: 2001-12

For EN60945; General Requirements (Continued):

Ergonomics

- IEC 60945: 2002-08
- IEC 61993-2: 2001-12

For GPS:

- IEC 61108-1: 2003-07 Clauses 4.2, 4.3, 5.6 and 5.7.

For Digital Interface:

- IEC 61162-2: 1998-09 Clause 8.
- IEC 61162-1: 2010-11

For Navigation Presentation:

- IEC 62288-2: 2008-07 Clause 4 and 7.
- IEC 61993-2: 2001-12

For Marine Band Spectrum Communication Usage:

- IEC 61993-2: 2001-12 Clause 15, for the AIS transmitter, receiver and DSC receiver
- IEC 61993-2: 2001-12 Clauses 14, 16, 17, 18, 19, 20, 21 for operational requirements