

INTERNATIONAL STANDARD



**Maritime navigation and radiocommunication equipment and systems – Class B
shipborne equipment of the automatic identification system (AIS) –
Part 2: Self-organising time division multiple access (SOTDMA) techniques**



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Part 2: Self-organising time division multiple access (SOTDMA) techniques**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – CLASS B SHIPBORNE EQUIPMENT OF THE AUTOMATIC IDENTIFICATION SYSTEM (AIS) –

Part 2: Self-organising time division multiple access (SOTDMA) techniques

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The text of this standard is based on the following documents:

FDIS	Report on voting
80/685/FDIS	80/691/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62287 series, published under the general title *Maritime navigation and radiocommunication and systems – Class B shipborne equipment of the automatic identification system (AIS)*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
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**MARITIME NAVIGATION AND RADIOCOMMUNICATION
EQUIPMENT AND SYSTEMS –
CLASS B SHIPBORNE EQUIPMENT OF
THE AUTOMATIC IDENTIFICATION SYSTEM (AIS) –**

**Part 2: Self-organising time division multiple access
(SOTDMA) techniques**

1 Scope

This part of IEC 62287 specifies operational and performance requirements, methods of testing and required test results for Class B “SO” shipborne AIS equipment using Self-organised TDMA (SOTDMA) techniques as described in Recommendation ITU-R M.1371. This standard takes into account other associated IEC International Standards and existing national standards, as applicable.

The main differences between Class B “CS” (IEC 62287-1) and Class B “SO” units are that the Class B “SO”:

- covers all 25 kHz channels listed in Recommendation ITU-R M.1084-5;
- only uses the internal GNSS, no position sensor input is allowed;
- requires use of VDL Message 17 for correction of the internal GNSS;
- has a presentation interface;
- has additional reporting intervals, down to 5 s;
- has two power settings, with a high level of 5 W;
- has the capability to transmit binary messages.

It is applicable for AIS equipment used on craft that are not covered by a mandatory carriage requirement of AIS under SOLAS Chapter V.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60945:2002, *Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results*

IEC 61108 (all parts), *Maritime navigation and radio communication equipment and systems – Global navigation satellite systems (GNSS)*

IEC 61108-4, *Maritime navigation and radio communication equipment and systems – Global navigation satellite systems (GNSS) – Part 4: Shipborne DGPS and DGLONASS maritime radio beacon receiver equipment – Performance requirements, methods of testing and required test results*

IEC 61162 (all parts), *Maritime navigation and radiocommunication equipment and systems – Digital interfaces*

IEC 61162-1, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 1: Single talker and multiple listeners*

IEC 61993-2, *Maritime navigation and radio communication equipment and systems – Automatic identification systems (AIS) – Part 2: Class A shipborne equipment of the universal automatic identification system (AIS) – Operational and performance requirements, methods of test and required test results*

ITU Radio regulations 2012, *Appendices*

ITU-R Recommendation M.825-3:1998, *Characteristics of a transponder system using digital selective calling techniques for use with vessel traffic services and ship-to-ship identification*

ITU-R Recommendation M.1084-5, *Interim solutions for improved efficiency in the use of the band 156-174 MHz by stations in the maritime mobile service*

ITU-R Recommendation M.1371-4:2010, *Technical characteristics for an automatic identification system using time division multiple access in the VHF maritime mobile band*

3 Abbreviations

AIS	Automatic Identification System
BER	Bit Error Rate
BIIT	Built-In Integrity Tests
BT	Bandwidth Time
COG	Course over ground
CRC	Cyclic Redundancy Check
CSD	Compass Safe Distance
DGNSS	Differential Global Navigation Satellite Service
DLS	Data Link Service
DSC	Digital Selective Calling
EUT	Equipment under test
FM	Frequency Modulation
GMSK	Gaussian Minimum Shift Keying
GNSS	Global Navigation Satellite Service
IMO	International Maritime Organization
ITDMA	Incremental Time Division Multiple Access
ITU	International Telecommunication Union
LME	Link Management Entity
MAC	Medium access control
MMSI	Maritime Mobile Service Identity
MSSA	Multi-channel slot selection access
NM	Nautical mile (1 NM = 1 852 m)
NRZI	Non Return to Zero Inverted
OSI	Open Systems Interconnection model
PER	Packet Error Rate
PI	Presentation Interface
RAIM	Receiver autonomous integrity monitoring