AS/NZS IEC 62320.1:2015
IEC 62320-1, Ed. 2.0 (2015)

AS/NZS IEC 62320.1:2015

Australian/New Zealand Standard™

Maritime navigation and radiocommunication equipment and systems—Automatic identification system (AIS)

Part 1: AIS Base Stations—Minimum operational and performance requirements, methods of testing and required test results

STANDARDS Australia

STANDARDS® NEW ZEALAND PAEREWA AOTEAROA

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee RC-004, Radiocommunications Equipment—Maritime and Safety of Life. It was approved on behalf of the Council of Standards Australia on 9 June 2015 and on behalf of the Council of Standards New Zealand on 11 June 2015.
This Standard was published on 29 June 2015.

The following are represented on Committee RC-004:

Australian Communications and Media Authority
Australian Industry Group
Australian Maritime Safety Authority
Australian Volunteer Coast Guard Association
Civil Aviation Safety Authority
Department of Defence (Australian Government)
Electromagnetic Technical Evaluation Committee
Maritime New Zealand
Ministry of Business, Innovation and Employment, New Zealand
Telecommunications Users Association of New Zealand
Wireless Institute Australia
Yachting Australia

This Standard was issued in draft form for comment as DR AS/NZS IEC 62320.1:2015.

Australian/New Zealand Standard™

Maritime navigation and radiocommunication equipment and systems—Automatic identification system (AIS)

Part 1: AIS Base Stations—Minimum operational and performance requirements, methods of testing and required test results

Originated at AS/NZS 62320.1:2010.
Revised and redesignated as AS/NZS IEC 62320.1:2015.

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, Private Bag 2439, Wellington 6140.

ISBN 978 1 76035 133 5

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee RC-004, Radiocommunications Equipment—Maritime and Safety of Life, to supersede AS/NZS 62320.1:2010.

The objective of this Standard is to provide the minimum operational and performance requirements, methods of test and the required test results for a type of non-shipborne automatic identification system (AIS) equipment known as an AIS base station.

This Standard is identical with, and has been reproduced from IEC 62320-1, Ed. 2.0 (2015), *Maritime navigation and radiocommunication equipment and systems—Automatic identification system (AIS)*, Part 1: *AIS Base Stations—Minimum operational and performance requirements, methods of testing and required test results*.

This edition includes the following significant technical changes with respect to the previous edition:

(a) Incorporation of the technical characteristics included in recommendation ITU-R M.1371-5.

(b) The BCE, BCF and CAB sentences replaced with BCG, BCL and RST.

(c) Comment blocks replaced with TAG blocks.

(d) Scheduled broadcast of Message 26 added.

(e) Message 27 control added.

(f) Transmitter intermodulation attenuation harmonized with ITU.

(g) 12.5 kHz channel operation removed.

(h) Transmission of Message 24A, Message 25 and Message 26 added.

(i) 90% channel load test with VSI and TAG blocks enabled added.

As this Standard is reproduced from an International Standard, the following applies:

(i) In the source text 'this part of IEC 62320' should read 'this Australian/New Zealand Standard'.

(ii) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
IEC		AS/NZS	
62287	Maritime navigation and radiocommunication equipment and systems—Class B shipborne equipment of the automatic identification system (AIS)	62287	Maritime navigation and radiocommunication equipment and systems—Class B shipborne equipment of the automatic identification system (AIS)
62287-1	Part 1: Carrier-sense time division multiple access (CSTDMA) techniques	62287.1	Part 1: Carrier-sense time division multiple access (CSTDMA) techniques

Only normative references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

The term 'normative' has been used in this Standard to define the application of the annex to which it applies. A 'normative' annex is an integral part of a Standard.

CONTENTS

Page

Page

Page

Page

INTRODUCTION

Chapter V of the International Convention for the Safety of Life at Sea 1974 (SOLAS) requires mandatory carriage of Automatic Identification System (AIS) equipment on all vessels constructed on or after 01 July 2002. Carriage for other types and sizes of SOLAS Convention vessels was required to be completed not later than 31 December 2004.

SOLAS Chapter V, Regulation 19, states that AIS shall:

a) provide automatically to appropriate equipped shore stations, other ships and aircraft information, including ship's identity, type, position, course, speed, navigational status and other safety-related information;

b) receive automatically such information from similarly fitted ships;

c) monitor and track ships; and

d) exchange data with shore-based facilities.

In addition, the IMO performance standards for AIS state that:

– The AIS should improve the safety of navigation by assisting in the efficient navigation of ships, protection of the environment, and operation of Vessel Traffic Services (VTS), by satisfying the following functional requirements:

  1) in a ship-to-ship mode for collision avoidance;

  2) as a means for littoral States to obtain information about a ship and its cargo; and

  3) as a VTS tool, i.e. ship-to-shore (traffic management).

– The AIS should be capable of providing to ships and to competent authorities, information from the ship, automatically and with the required accuracy and frequency, to facilitate accurate tracking. Transmission of the data should be with the minimum involvement of ship's personnel and with a high level of availability.

The provision of Shore Based AIS is necessary to attain the full benefit of the SOLAS Convention requirements.

This part of IEC 62320 provides the minimum operational and performance requirements, methods of test and the required test results for AIS Base Stations. The testing is divided into three sections, the transceiver tests, the logical tests and the Presentation Interface tests. These are captured in Clauses 8, 9 and 10 respectively. The method used for testing is that the EUT should meet all the tests requirements of Clause 8 before proceeding to Clause 9. Likewise, the unit should meet all of the test requirements before proceeding to Clause 10. Clause 10 has also been prioritised so that the tests are progressive.

Clauses 5 to 7 provide functional requirement information and Clause 8 provides the general test environment for the EUT.

NOTES

AUSTRALIAN/NEW ZEALAND STANDARD

Maritime navigation and radiocommunication equipment and systems—Automatic identification system (AIS)

Part 1:
AIS Base Stations—Minimum operational and performance requirements, methods of testing and required test results

1 Scope

This part of IEC 62320 specifies the minimum operational and performance requirements, methods of testing and required test results for AIS Base Stations, compatible with the performance standards adopted by IMO Resolution MSC.74 (69), Annex 3, Universal AIS. It incorporates the technical characteristics of non-shipborne, fixed station AIS equipment, included in recommendation ITU-R M.1371 and IALA Recommendation A-124. Where applicable, it also takes into account the ITU Radio Regulations. This standard takes into account other associated IEC international standards and existing national standards, as applicable.

This standard is applicable for AIS Base Stations. It does not include specifications for the display of AIS data on shore.

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 61108-1, *Maritime navigation and radiocommunication equipment and systems – Global navigation satellite systems (GNSS) – Part 1: Global positioning system (GPS) – Receiver equipment – Performance standards, methods of testing and required test results*

IEC 61162-1:2010, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 1: Single talker and multiple listeners*

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

IEC 62287-1:2010, *Maritime navigation and radiocommunication equipment and systems – Class B shipborne equipment of the automatic identification system (AIS) – Part 1: Carrier-sense time division multiple access (CSTDMA) techniques*
IEC 62287-1:2010/AMD1:2013

IEC 62320-2, *Maritime navigation and radiocommunication equipment and systems – Automatic identification system (AIS) – Part 2: AIS AtoN Stations – Operational and performance requirements, methods of testing and required test results*

IMO Resolution MSC.74 (69), Annex 3, *Recommendation on performance standards for an universal shipborne automatic identification system (AIS)*