

INTERNATIONAL STANDARD

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**Maritime navigation and radiocommunication equipment and systems –
Global navigation satellite systems (GNSS) –
Part 5: BeiDou navigation satellite system (BDS) – Receiver equipment –
Performance requirements, methods of testing and required test results**

**Matériels et systèmes de navigation et de radiocommunication maritimes –
Système mondial de navigation par satellite (GNSS) –
Partie 5: Système de navigation par satellite BeiDou (BDS) –
Matériels de réception – Exigences de performances, méthodes d'essai et
résultats d'essai exigés**





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CONTENTS

FOREWORD	4
1 Scope	6
2 Normative references	6
3 Terms, definitions and abbreviated terms	7
3.1 Terms and definitions	7
3.2 Abbreviated terms	8
4 Minimum performance requirements	9
4.1 Object	9
4.2 BDS receiver equipment	9
4.2.1 Minimum facilities	9
4.2.2 Configuration	9
4.2.3 Quality assurance	10
4.3 Performance of BDS receiver equipment	10
4.3.1 General	10
4.3.2 Equipment interfaces	10
4.3.3 Accuracy	12
4.3.4 Acquisition	12
4.3.5 Protection	13
4.3.6 Antenna design	13
4.3.7 Sensitivity and dynamic range	13
4.3.8 Effects of specific interfering signals	13
4.3.9 Position update	14
4.3.10 Differential BDS input	14
4.3.11 Navigation warnings and status indications	15
4.3.12 Output of COG, SOG and UTC	17
4.3.13 Typical interference conditions	18
5 Methods of testing and required test results	18
5.1 Test sites	18
5.2 Test sequence	19
5.3 Standard test signals	19
5.4 Determination of accuracy	19
5.5 General requirements and presentation requirements	20
5.5.1 Normal environmental conditions for tests	20
5.5.2 General requirements	20
5.5.3 Presentation requirements	20
5.6 Receiver performance tests	20
5.6.1 BDS receiver equipment	20
5.6.2 Position output	20
5.6.3 Equipment interfaces	20
5.6.4 Accuracy	20
5.6.5 Acquisition	22
5.6.6 Protection	23
5.6.7 Antenna design	23
5.6.8 Sensitivity and dynamic range	23
5.6.9 Protection from other shipborne transmitters	23
5.6.10 Position update	24
5.6.11 Differential BDS input	24

5.6.12 Navigational warnings and status indications	25
5.6.13 Accuracy of COG and SOG.....	27
5.6.14 Validity of COG and SOG information	28
5.6.15 Output of UTC	28
5.7 Tests for typical RF interference conditions.....	28
5.7.1 Simulator conditions	28
5.7.2 Navigation solution accuracy test.....	28
5.7.3 Re-acquisition test.....	29
Annex A (normative) Typical BDS interference environment.....	31
A.1 BDS CW in-band and near-band interference environment.....	31
A.2 Band-limited noise-like interference	32
A.3 Pulsed interference	33
A.4 BDS minimum antenna gain	34
Annex B (normative) Alert management	35
Annex C (normative) Sentences to support BDS receiver operation	36
C.1 General.....	36
C.2 DTM – Datum reference	36
C.3 GBS – GNSS satellite fault detection	37
C.4 GDC – GNSS differential correction	39
C.5 GFA – GNSS fix accuracy and integrity.....	41
C.6 GNS – GNSS fix data.....	42
C.7 GRS – GNSS range residuals	45
C.8 GSA – GNSS DOP and active satellites	47
C.9 GST – GNSS pseudorange error statistics	49
C.10 GSV – GNSS satellites in view.....	50
Bibliography.....	53
Figure 1 – Logical interfaces of BDS receiver	11
Figure A.1 – CW interference thresholds for BDS receivers in steady-state navigation.....	32
Figure A.2 – Interference thresholds versus bandwidth for BDS	33
Table 1 – Acquisition time limits.....	13
Table 2 – RAIM integrity states	17
Table 3 – Accuracy of COG	18
Table 4 – RF interference value	29
Table A.1 – CW interference thresholds for BDS receivers in steady-state navigation.....	31
Table A.2 – Interference threshold for band-limited noise-like interference to BDS receivers in steady-state navigation	33
Table A.3 – Interference characteristics for pulsed interference	34
Table A.4 – BDS minimum antenna gain	34
Table B.1 – Required alerts and their classification.....	35

INTERNATIONAL ELECTROTECHNICAL COMMISSION

MARITIME NAVIGATION AND RADIOTRANSFER EQUIPMENT AND SYSTEMS – GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS) –**Part 5: BeiDou navigation satellite system (BDS) – Receiver equipment – Performance requirements, methods of testing and required test results****FOREWORD**

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The text of this International Standard is based on the following documents:

FDIS	Report on voting
80/952/FDIS	80/955/RVD

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

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

All text of this document, whose meaning is identical to that in IMO resolution MSC.379(93), is printed in italics and the resolution and paragraph numbers are indicated in brackets, i.e. (M.379/A1.2).

A list of all parts in the IEC 61108 series, published under the general title *Maritime navigation and radiocommunication equipment and systems – Global navigation satellite systems (GNSS)*, can be found on the IEC website.

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

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MARITIME NAVIGATION AND RADIOTRANSFER EQUIPMENT AND SYSTEMS – GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS) –

Part 5: BeiDou navigation satellite system (BDS) – Receiver equipment – Performance requirements, methods of testing and required test results

1 Scope

This part of IEC 61108 specifies the minimum performance requirements, methods of testing and required test results for BDS shipborne receiver equipment, based on IMO resolution MSC.379(93), which uses the signals from the BeiDou navigation satellite system in order to determine position. It takes account of the general requirements given in IMO resolution A.694(17) and is associated with IEC 60945. When a requirement in this document is different from IEC 60945, the requirement in this document takes precedence. This document also takes account, as appropriate, of requirements for the presentation of navigation-related information on shipborne navigational displays given in IMO resolution MSC.191(79) and is associated with IEC 62288 and MSC.302(87) associated with IEC 62923-1.

This receiver standard applies to navigation in the ocean, coastal, harbour entrances, harbour approaches and restricted waters, as defined in IMO resolution A.915(22) and IMO resolution A.1046(27).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60721-3-6:1987, *Classification of environmental conditions. Part 3: Classification of groups of environmental parameters and their severities. Ship environment*

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

IEC 61108-4, *Maritime navigation and radiotransfer 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 61162-1, *Maritime navigation and radiotransfer equipment and systems – Digital interfaces – Part 1: Single talker and multiple listeners*

IEC 61162-2, *Maritime navigation and radiotransfer equipment and systems – Digital interfaces – Part 2: Single talker and multiple listeners, high-speed transmission*

IEC 61162-450, *Maritime navigation and radiotransfer equipment and systems – Digital interfaces – Part 450: Multiple talkers and multiple listeners – Ethernet interconnection*

IEC 62288, *Maritime navigation and radiotransfer equipment and systems – Presentation of navigation-related information on shipborne navigational displays – General requirements, methods of testing and required test results*

IEC 62923-1, *Maritime navigation and radiocommunication equipment and systems – Bridge alert management – Part 1: Operational and performance requirements, methods of testing and required test results*

IEC 62923-2, *Maritime navigation and radiocommunication equipment and systems – Bridge alert management – Part 2: Alert and cluster identifiers and other additional features*

ITU-R Recommendation M.823-3, *Technical characteristics of differential transmissions for global navigation satellite systems from maritime radio beacons in the frequency band 283.5-315 kHz in Region 1 and 285-325 kHz in Regions 2 and 3*

IMO resolution A.694(17), *General requirements for shipborne radio equipment forming part of the Global maritime distress and safety system (GMDSS) and for electronic navigational aids*

IMO resolution A.915(22), *Revised maritime policy and requirements for a future Global Navigation Satellite System (GNSS)*

IMO resolution A.1046(27), *Worldwide radionavigation system*

IMO resolution MSC.379(93), *Performance standards for shipborne BeiDou satellite navigation system (BDS) receiver equipment*

IMO resolution MSC.401(95), *Performance standards for multi-system shipborne radionavigation receivers*

RTCM 10402.4, *Recommended standards for differential GNSS (Global Navigation Satellite Systems) service*

BDS-SIS-ICD-B1I-3.0, *BeiDou Navigation Satellite System Signal In Space Interface Control Document Open Service Signal B1I (Version 3.0)*, China Satellite Navigation Office

3 Terms, definitions and abbreviated terms

For the purposes of this document, the following terms, definitions and abbreviated terms apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1 Terms and definitions

3.1.1

BeiDou coordinate system

BDCS

coordinate system adopted by BDS

Note 1 to entry: The definition of BDCS is in accordance with the specifications of the International earth rotation and reference system service (IERS), and it is consistent with the definition of the China geodetic coordinate system 2000 (CGCS2000). BDCS and CGCS2000 have the same ellipsoid parameters. The origin is located at the Earth's centre of mass. The Z-axis is the direction of the IERS reference pole (IRP). The X-axis is the intersection of the IERS Reference Meridian (IRM) and the plane passing through the origin and normal to the Z-axis. The Y-axis, together with Z-axis and X-axis, constitutes a right-handed orthogonal coordinate system. The length unit is the international system of units (SI) metre.

Note 2 to entry: This note applies to the French language only.