IEC 61162-2

Edition 2.0 2024-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

Matériels et systèmes de navigation et de radiocommunication maritimes – Interfaces numériques –
Partie 2: Emetteur unique et récepteurs multiples, transfert rapide de données



IEC 61162-2:2024-04(en-fr)



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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 47.020.70

ISBN 978-2-8322-7756-0

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – DIGITAL INTERFACES –

Part 2: Single talker and multiple listeners, high-speed transmission

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IEC 61162-2 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems. It is an International Standard.

This second edition cancels and replaces the first edition published in 1998. This edition constitutes a technical revision.

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

a) alternative hardware is given in 5.1 which may now be as specified in this document or as specified in IEC 61162-1;
b) the data transmission rate given in Clause 6 is now configurable. The default remains as 38 400 (bits/s) but higher rates may be provided;

c) the description of the data format protocol has been removed as this information is given in IEC 61162-1;

d) former Annex A and Annex B have been deleted as now of historic interest.

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

Draft	Report on voting
80/1065/CDV	80/1083/RVC

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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

- reconfirmed,
- withdrawn, or
- revised.

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – DIGITAL INTERFACES –

Part 2: Single talker and multiple listeners, high-speed transmission

1 Scope

This part of IEC 61162 contains the requirements for data communication between maritime electronic instruments, navigation and radiocommunication equipment when interconnected via an appropriate interface.

This document is intended to support one-way serial data transmission from a single talker to one or more listeners. This data is in printable ASCII form and can include any information as specified by approved sentences or information coded according to the rules for proprietary sentences. Typical messages can be from 11 to a maximum of 79 characters in length and generally require repetition rates up to once per 20 ms.

The electrical definitions in this document are intended to accommodate higher data rates than are specified in IEC 61162-1. Since there is no provision for guaranteed delivery of messages and only limited error-checking capability, it is important this document is used with caution in all safety applications.

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

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

ITU-T Recommendation X.27/V.11, *Electrical characteristics for balanced double-current interchange circuits operating at data signalling rates up to 10 Mbits/s*

3 Terms, definitions and abbreviated terms

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

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

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

3.1 Terms and definitions

3.1.1
talker
device which sends data to other devices

Note 1 to entry: The type of talker is identified by a two-character mnemonic as listed in IEC 61162-1.

3.1.2
listener
device which receives data from another device

3.1.3
latency
time interval between an event and its resulting information, including time for processing, transmission and/or reception

3.2 Abbreviated terms

EMC electromagnetic compatibility

EUT equipment under test

4 Manufacturer's documentation

4.1 Standard documents

Installation manuals provided for equipment that is intended to meet the requirements of this document shall contain as a minimum the following information:

a) identification of the A, B and common (C) signal lines (see Figure 1);

b) the output drive capability as a talker;

c) a list of approved sentences, noting unused fields, proprietary sentences transmitted as a talker, data latency and transmission interval for each sentence;

d) the load requirements as a listener;

e) a list of sentences and associated data fields that are required by, or are acceptable to, a listener;

f) the current software and hardware revision, if this is relevant to the interface;

g) an electrical description or schematic of the listener/talker input/output circuits citing actual components and devices used, including connector type and part number;

h) the version number and date of update of the standard for which compliance is sought;

i) list of supported baud rates (bits/s) including any limitations per each baud rate supported.

4.2 Additional information

As latency, filtering, error handling and data transmission interval can have a serious influence on the performance of a system, the manufacturer shall consider these aspects. Documentation should include such data where applicable.

5 Hardware specification

5.1 General

One talker and multiple listeners may be connected in parallel over interconnecting wires. Because of EMC requirements, shielded cables are recommended. The number of listeners depends on the output capability, the input drive requirements of the connected devices, and on the use of termination resistors.