



SLOVENSKI STANDARD

SIST EN 301 843-4:2001

01-september-2001

Elektromagnetna združljivost (EMC) in zadeve v zvezi z radijskim spektrom (ERM) - Standard elektromagnetne združljivosti (EMC) za pomorsko radijsko opremo in storitve - 4. del: Posebni pogoji za ozkopasovne sprejemnike "Direct-Printing (NBDP) NAVTEX"

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for marine radio equipment and services; Part 4: Specific conditions for Narrow-Band Direct-Printing (NBDP) NAVTEX receivers

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 301 843-4:2001](https://standards.iteh.ai/catalog/standards/sist/c4c87c8a-c9bf-4a0c-9ff1-dcebf142ecce/sist-en-301-843-4-2001)

<https://standards.iteh.ai/catalog/standards/sist/c4c87c8a-c9bf-4a0c-9ff1-dcebf142ecce/sist-en-301-843-4-2001>

Ta slovenski standard je istoveten z: EN 301 843-4 Version 1.1.1

ICS:

33.100.99 Drugi vidiki v zvezi z EMC Other aspects related to EMC

SIST EN 301 843-4:2001

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 301 843-4:2001](#)

<https://standards.iteh.ai/catalog/standards/sist/c4c87c8a-c9bf-4a0c-9ff1-dceb142ecce/sist-en-301-843-4-2001>

ETSI EN 301 843-4 V1.1.1 (2001-02)

Candidate Harmonized European Standard (Telecommunications series)

**Electromagnetic compatibility
and Radio spectrum Matters (ERM);
ElectroMagnetic Compatibility (EMC)
standard for marine radio equipment and services;
Part 4: Specific conditions for Narrow-Band
Direct-Printing (NBDP) NAVTEX receivers**

**iTeh STANDARD PREVIEW
(standards.iteh.ai)**

[SIST EN 301 843-4:2001](https://standards.iteh.ai/catalog/standards/sist/c4c87c8a-c9bf-4a0c-9ff1-dceb142ecce/sist-en-301-843-4-2001)

<https://standards.iteh.ai/catalog/standards/sist/c4c87c8a-c9bf-4a0c-9ff1-dceb142ecce/sist-en-301-843-4-2001>



Reference

DEN/ERM-EMC-221-4

KeywordsEMC, maritime, NAVTEX, radio, receiver,
regulation**ETSI**

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 301 843-4:2001

<https://standards.iteh.ai/catalog/standards/sist/c4c87c8a-c9bf-4a0c-9ff1-dceb142ecce/sist-en-301-843-4-2001>

Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at <http://www.etsi.org/tb/status/>

If you find errors in the present document, send your comment to:
editor@etsi.fr

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2001.
All rights reserved.

Contents

Intellectual Property Rights	4
Foreword	4
1 Scope.....	5
2 References	5
3 Definitions, abbreviations, and symbols	6
3.1 Definitions	6
3.2 Abbreviations.....	6
3.3 Symbols	6
4 Test conditions	6
4.1 General	6
4.2 Arrangements for test signals.....	6
4.2.1 Arrangements for test signals at the input of the receiver.....	6
4.2.2 Arrangements for test signals at the output of the receiver.....	7
4.3 Exclusion bands	7
4.3.1 Exclusion bands for receivers	7
4.4 Narrow band responses on receivers	7
4.5 Normal test modulation	7
5 Performance assessment	7
5.1 General	7
5.2 Equipment which can provide a continuous communication link	8
5.3 Ancillary equipment.....	8
5.4 Equipment classification.....	8
6 Performance criteria.....	8
6.1 Performance criteria A for continuous phenomena applied to receivers.....	8
6.2 Performance criteria B for transient phenomena applied to receivers	8
6.3 Performance criteria C applied to power supply failure.....	9
6.4 Performance check	9
6.4.1 Receiver	9
6.5 Performance criteria for equipment which does not provide a continuous communication link.....	9
7 Applicability overview.....	9
7.1 Emission	9
7.1.1 General.....	9
7.1.2 Special conditions.....	9
7.2 Immunity	9
7.2.1 General.....	9
7.2.2 Special conditions.....	10
History	11

iTech STANDARD PREVIEW
(standards.iteh.ai)

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://www.etsi.org/ipr>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Candidate Harmonized European Standard (Telecommunications series) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document has been produced by ETSI in response to a mandate from the European Commission issued under the Council Directive 98/34/EC [6] (as amended) laying down a procedure for the provision of information in the field of technical standards and regulation.

The present document, together with EN 301 843-1 [1], is intended to become a Harmonized Standard, the reference of which will be published in the Official Journal of the European Communities referencing the Council Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility ("the EMC Directive") (89/336/EEC [3] as amended), and the Council Directive on the approximation of the laws of the Member States relating to radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (the "R&TTE Directive" 1999/5/EC [2]).

The present document is part 4 of a multi-part deliverable covering the ElectroMagnetic Compatibility (EMC) standard for marine radio equipment and services, as identified below:

- Part 1: "Common technical requirements";
- Part 2: "Specific conditions for maritime radiotelephone transmitters and receivers";
- Part 4: "Specific conditions for Narrow-Band Direct-Printing (NBDP) NAVTEX receivers".**

National transposition dates

Date of adoption of this EN:	23 February 2001
Date of latest announcement of this EN (doa):	31 May 2001
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 November 2001
Date of withdrawal of any conflicting National Standard (dow):	30 November 2002

1 Scope

The present document together with the EN 301 843-1 [1], covers the assessment of Narrow-Band Direct-Printing (NBDP) NAVTEX receivers operating in the maritime mobile service, and ancillary equipment in respect of ElectroMagnetic Compatibility (EMC).

Technical specifications related to the antenna port and emissions from the enclosure port of NAVTEX receivers are not included in the present document. Such technical specifications are found in the related product standard ETS 300 065 [4] for the effective use of the radio spectrum.

The present document specifies the applicable test conditions, performance assessment, and performance criteria for NAVTEX receivers operating in the maritime mobile service, and the associated ancillary equipment.

In case of differences (for instance concerning special conditions, definitions, abbreviations) between the present document and EN 301 843-1 [1], the provisions of the present document take precedence.

The electromagnetic environment used in the present document to develop the technical specifications encompasses the electromagnetic environment onboard ships as identified in EN 60945 [5].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

- iTech STANDARD PREVIEW
(standards.itech.ai)
- SIST EN 301 843-4:2001
<https://standards.itech.ai/catalog/standards/sist/c4c87c8a-c9bf-4a0c-9ff1-d7cb143e9a/sist-en-301-843-4-2001>
- [1] ETSI EN 301 843-1 (V1.1.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for marine radio equipment and services; Part 1: Common technical requirements".
- [2] Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications equipment and the mutual recognition of their conformity. (R&TTE Directive).
- [3] Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility. (EMC Directive).
- [4] ETSI ETS 300 065 (1992): "Radio Equipment and Systems (RES); Narrow-band direct-printing telegraph equipment for receiving meteorological or navigational information (NAVTEX); Technical characteristics and methods of measurement".
- [5] EN 60945 (1997): "Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results".
- [6] Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations.

3 Definitions, abbreviations, and symbols

3.1 Definitions

For the purposes of the present document, the terms and definitions given in EN 301 843-1 [1], clause 3, apply.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AC	Alternating Current
CER	Character Error Rate
DC	Direct Current
EMC	ElectroMagnetic Compatibility
EUT	Equipment Under Test
IMO	International Maritime Organization
RF	Radio Frequency
SOLAS	Safety Of Life At Sea

3.3 Symbols

For the purposes of the present document, the following symbols apply:

emf	electromotive force
rms	root mean square

STANDARD PREVIEW
(standards.iteh.ai)

4 Test conditions SIST EN 301 843-4:2001

<https://standards.iteh.ai/catalog/standards/sist/c4c87c8a-c9bf-4a0c-9ff1-dceb142ecce/sist-en-301-843-4-2001>

For the purposes of the present document, the test conditions of EN 301 843-1 [1], clause 4, shall apply as appropriate. Further product related test conditions for NAVTEX receivers are specified in the present document.

4.1 General

The provisions of EN 301 843-1 [1], clause 4.1 shall apply with the following modifications.

For emission and immunity tests the normal test modulation, test arrangements, etc., as specified in the present document, clauses 4.1 to 4.5, shall apply.

All tests shall be performed with the wanted RF input signal on the operating frequency 518 kHz unless stated otherwise.

4.2 Arrangements for test signals

The provisions of EN 301 843-1 [1], clause 4.2 shall apply.

4.2.1 Arrangements for test signals at the input of the receiver

The provisions of EN 301 843-1 [1], clause 4.2.3 shall apply with the following modifications.

The wanted RF input signal, coupled to the receiver, shall be modulated with normal test modulation as specified for that type of equipment (see clause 4.5 of the present document).

The level of the wanted signal shall be 40 dB μ V (emf) unless indicated otherwise.

4.2.2 Arrangements for test signals at the output of the receiver

The output of the receiver consists of the printout of transmitted messages.

During immunity tests with continuous RF test signals, the output of the receiver shall be monitored, e.g. by means of a camera coupled to a monitor located outside the test environment, for the verification of continuous printing.

4.3 Exclusion bands

The frequencies on which NAVTEX receivers are intended to operate, shall be excluded from conducted and radiated RF immunity tests.

There shall be no frequency exclusion band applied to emission measurements of NAVTEX receivers, and/or associated ancillary equipment.

The immunity test exclusions are referred to as "exclusion band" and are defined in clause 4.3.1 of the present document.

4.3.1 Exclusion bands for receivers

The exclusion band for NAVTEX receivers is the frequency range 490 kHz to 545 kHz.

4.4 Narrow band responses on receivers

The provision of EN 301 843-1 [1], clause 4.4 shall apply with the following modifications.

No immunity tests shall be carried out on frequencies of identified narrow band responses on NAVTEX receivers.

An increase of the Character Error Rate (CER) above the value of 4×10^{-2} shall be used as criterion for the identification of narrow band responses.

The nominal frequency offset to be used for the identification of narrowband responses shall be ± 1 kHz for the first part of the identification procedure, and $\pm 1,25$ kHz for its second part.

All narrowband responses shall be disregarded from immunity tests.

4.5 Normal test modulation

The normal wanted RF test signal shall be an F1B radio-frequency signal modulated with a frequency shift of ± 85 Hz centred on 518 kHz.

It shall contain signals providing the following traffic information:

- 1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J K L M N O P Q R S T U - Carriage return - Line feed.

For tests with the normal wanted RF test signal, the above information shall be transmitted at least 35 times continuously.

5 Performance assessment

5.1 General

The manufacturer shall at the time of submission of the equipment for test, supply the necessary general information as requested in EN 301 843-1 [1], clause 5.1.