

Final draft **ETSI EN 301 929-2** V1.1.1 (2001-11)

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*Candidate Harmonized European Standard (Telecommunications series)*

**Electromagnetic compatibility  
and Radio Spectrum Matters (ERM);  
VHF transmitters and receivers as Coast Stations for GMDSS  
and other applications in the maritime mobile service;  
Part 2: Harmonized EN under article 3.2 of the R&TTE Directive**

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Reference

DEN/ERM-RP01-041-2

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## Foreword

This Candidate Harmonized European Standard (Telecommunications series) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM), and is now submitted for the Vote phase of the ETSI standards Two-step Approval Procedure.

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

The present document is intended to become a Harmonized Standard, the reference of which will be published in the Official Journal of the European Communities referencing the Directive 1999/5/EC [1] of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity ("the R&TTE Directive").

The present document is part 2 of a multi-part deliverable covering VHF transmitters and receivers as Coast Stations for GMDSS and other applications in the maritime mobile service, as identified below:

**Part 1:** "Technical characteristics and methods of measurement";

**Part 2:** "**Harmonized EN under article 3.2 of the R&TTE Directive**".

<b>Proposed national transposition dates</b>	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	18 months after doa

# Introduction

The present document is part of a set of standards designed to fit in a modular structure to cover all radio and telecommunications terminal equipment under the R&TTE Directive [1]. Each standard is a module in the structure. The modular structure is shown in figure 1.

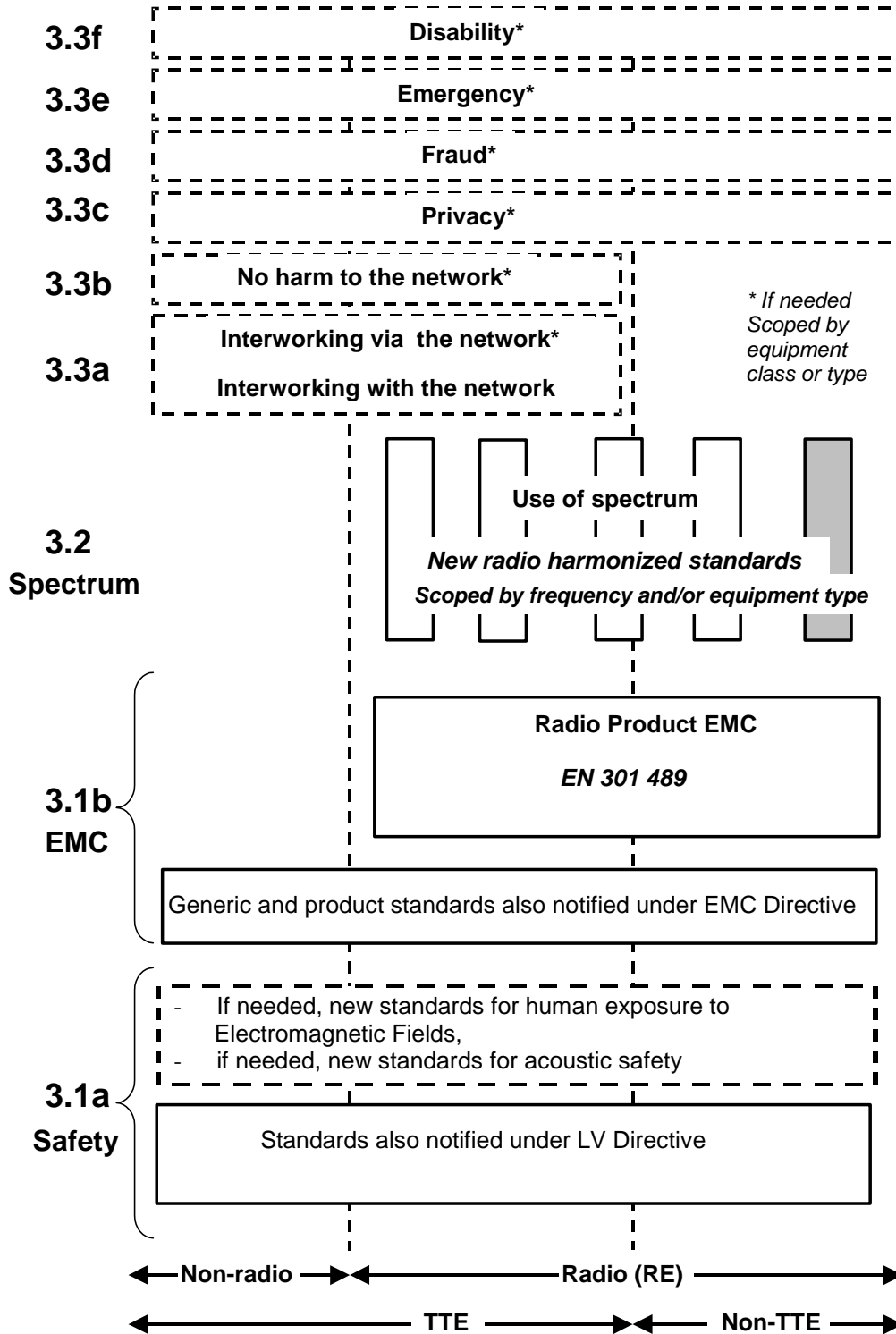


Figure 1: Modular structure for the various standards used under the R&TTE Directive

The left hand edge of the figure 1 shows the different clauses of article 3 of the R&TTE Directive.

For article 3.3 various horizontal boxes are shown. Dotted lines indicate that at the time of publication of the present document essential requirements in these areas have to be adopted by the Commission. If such essential requirements are adopted, and as far and as long as they are applicable, they will justify individual standards whose scope is likely to be specified by function or interface type.

The vertical boxes show the standards under article 3.2 for the use of the radio spectrum by radio equipment. The scopes of these standards are specified either by frequency (normally in the case where frequency bands are harmonized) or by radio equipment type.

For article 3.1b the diagram shows EN 301 489 [7], the single multi-part product EMC standard for radio, and the existing collection of generic and product standards currently used under the EMC Directive [2].

For article 3.1a the diagram shows the existing safety standards currently used under the LV Directive [3] and new standards covering human exposure to electromagnetic fields. New standards covering acoustic safety may also be required.

The bottom of the figure shows the relationship of the standards to radio equipment and telecommunications terminal equipment. A particular equipment may be radio equipment, telecommunications terminal equipment or both. A radio spectrum standard will apply if it is radio equipment. An article 3.3 standard will apply as well only if the relevant essential requirement under the R&TTE Directive [1] is adopted by the Commission and if the equipment in question is covered by the scope of the corresponding standard. Thus, depending on the nature of the equipment, the essential requirements under the R&TTE Directive [1] may be covered in a set of standards.

The modularity principle has been taken because:

- it minimizes the number of standards needed. Because equipment may, in fact, have multiple interfaces and functions it is not practicable to produce a single standard for each possible combination of functions that may occur in an equipment;
- it provides scope for standards to be added:
  - under article 3.2 when new frequency bands are agreed; or
  - under article 3.3 should the Commission take the necessary decisions without requiring alteration of standards that are already published;
- it clarifies, simplifies and promotes the usage of Harmonized Standards as the relevant means of conformity assessment.



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# 1 Scope

The present document applies to the following radio equipment:

- Transmitters, receivers and transceivers fitted with external antenna connectors, used as coast stations, operating in the VHF band of the maritime mobile service as defined in the Radio Regulations, Appendix S18 [5] and utilizing class of emission G3E, and where relevant G2B for DSC signalling.
- This includes:
  - equipment operating under local or remote control;
  - equipment operating on 25 kHz channel spacing;
  - equipment capable of analogue speech, Digital Selective Calling (DSC), or both;
  - equipment operating in Simplex, Semi-Duplex (Half Duplex) and Duplex modes;
  - equipment which may consist of more than one unit;
  - equipment which may be single-channel or multi-channel;
  - equipment operating on shared radio sites;
  - equipment operating in isolation from other radio equipment.

The present document is intended to cover the provisions of Directive 1999/5/EC [1] (R&TTE Directive) article 3.2, which states that "... radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications and orbital resources so as to avoid harmful interference".

In addition to the present document, other ENs that specify technical requirements in respect of essential requirements under other parts of article 3 of the R&TTE Directive [1] will apply to equipment within the scope of the present document.

NOTE: A list of such ENs is included on the web site <http://www.newapproach.org>.

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# 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.

- [1] Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.
- [2] Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility.
- [3] Council Directive 73/23/EEC of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.
- [4] ETSI ETR 028 (1994): "Radio Equipment and Systems (RES); Uncertainties in the measurement of mobile radio equipment characteristics".
- [5] ITU Radio Regulations (1998).

- [6] ETSI ETR 273: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties".
- [7] ETSI EN 301 489 (all parts): "ElectroMagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services".
- [8] ETSI EN 301 929-1 (V1.1.1): "Electromagnetic compatibility and Radio Spectrum Matters (ERM); VHF transmitters and receivers as Coast Stations for GMDSS and other applications in the maritime mobile service; Part 1: Technical characteristics and methods of measurement".

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in the R&TTE Directive [1] and the following apply:

**environmental profile:** range of environmental conditions under which equipment within the scope of the present document is required to comply

**G3E:** phase-modulation (Frequency modulation with a pre-emphasis of 6 dB/octave) for analogue speech

**G2B:** phase-modulation with digital information, with a sub-carrier for Digital selective Calling (DSC) operation

**modulation index:** ratio between the frequency deviation and the modulation frequency

### 3.2 Abbreviations

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

DSC	Digital Selective Calling
EMC	Electro-Magnetic Compatibility
LV	Low Voltage
R&TTE	Radio and Telecommunications Terminal Equipment
SINAD	Signal + Noise + Distortion/Noise + Distortion
VHF	Very High Frequency

## 4 Technical requirements specifications

### 4.1 Environmental profile

The technical requirements of the present document apply under the environmental profile for operation of the equipment, which shall be determined by the environmental class of the equipment. The equipment shall comply with all the technical requirements of the present document at all times when operating within the boundary limits of the required operational environmental profile.

### 4.2 Conformance requirements

#### 4.2.1 Transmitter frequency error

##### 4.2.1.1 Definition

The frequency error is defined in EN 301 929-1 [8], clause 8.1.1.

#### 4.2.1.2 Limits

The transmitter frequency error limit shall be as stated in EN 301 929-1 [8], clause 8.1.3.

#### 4.2.1.3 Conformance

Conformance tests as defined in clause 5.3.1 shall be carried out.

### 4.2.2 Transmitter carrier power

#### 4.2.2.1 Definition

The transmitter carrier power is defined in EN 301 929-1 [8], clause 8.2.1.

#### 4.2.2.2 Limits

The transmitter carrier power limit shall be as stated in EN 301 929-1 [8], clause 8.2.3.

#### 4.2.2.3 Conformance

Conformance tests as defined in clause 5.3.2 shall be carried out.

### 4.2.3 Transmitter frequency deviation

#### 4.2.3.1 Definition

The transmitter frequency deviation is defined in EN 301 929-1 [8], clause 8.3.1.

#### 4.2.3.2 Limits

The transmitter frequency deviation limit shall be as stated in EN 301 929-1 [8], clause 8.3.2.2.

#### 4.2.3.3 Conformance

Conformance tests as defined in clause 5.3.3. shall be carried out.

### 4.2.4 Transmitter adjacent channel power

#### 4.2.4.1 Definition

The transmitter adjacent channel power is defined in EN 301 929-1 [8], clause 8.6.1.

#### 4.2.4.2 Limits

The transmitter adjacent channel power limit shall be as stated in EN 301 929-1 [8], clause 8.6.3.

#### 4.2.4.3 Conformance

Conformance tests as defined in clause 5.3.4 shall be carried out.

### 4.2.5 Transmitter conducted spurious emissions conveyed to the antenna

#### 4.2.5.1 Definition

Conducted spurious emissions conveyed to the antenna are defined in EN 301 929-1 [8], clause 8.7.1.

#### 4.2.5.2 Limits

The transmitter conducted spurious emissions conveyed to the antenna limit shall be as stated in EN 301 929-1 [8], clause 8.7.3.

#### 4.2.5.3 Conformance

Conformance tests as defined in clause 5.3.5 shall be carried out.

### 4.2.6 Transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna

#### 4.2.6.1 Definition

Cabinet radiation and conducted spurious emissions other than those conveyed to the antenna are defined in EN 301 929-1 [8], clause 8.8.1.

#### 4.2.6.2 Limits

The transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna limit shall be as stated in EN 301 929-1 [8], clause 8.8.3.

#### 4.2.6.3 Conformance

Conformance tests as defined in clause 5.3.6 shall be carried out.

### 4.2.7 DSC transmitter modulation index

#### 4.2.7.1 Definition

DSC transmitter modulation index is defined in EN 301 929-1 [8], clause 8.10.1.

#### 4.2.7.2 Limits

The DSC transmitter modulation index shall be as stated in EN 301 929-1 [8], clause 8.10.3.

#### 4.2.7.3 Conformance

Conformance tests as described in clause 5.3.7 shall be carried out.

### 4.2.8 Transient frequency behaviour of the transmitter

#### 4.2.8.1 Definitions

The transient frequency behaviour of the transmitter is defined in EN 301 929-1 [8], clause 8.13.1.

#### 4.2.8.2 Limits

The transient frequency behaviour of the transmitter limit shall be as stated in EN 301 929-1 [8], clause 8.13.3.

#### 4.2.8.3 Conformance

Conformance tests as described in clause 5.3.8 shall be carried out.

## 4.2.9 Intermodulation attenuation

### 4.2.9.1 Definitions

The intermodulation attenuation of the transmitter is defined in EN 301 929-1 [8], clause 8.14.1.

### 4.2.9.2 Limits

The intermodulation attenuation shall be as stated in EN 301 929-1 [8], clause 8.14.3.

### 4.2.9.3 Conformance

Conformance tests as described in clause 5.3.9 shall be carried out.

## 4.2.10 Receiver maximum usable sensitivity

### 4.2.10.1 Definition

The receiver maximum usable sensitivity of the receiver is defined in EN 301 929-1 [8], clause 9.4.1.

### 4.2.10.2 Limits

The receiver maximum usable sensitivity limit shall be as stated in EN 301 929-1 [8], clause 9.4.3.

### 4.2.10.3 Conformance

Conformance tests as defined in clause 5.4.2 shall be carried out.

## 4.2.11 Receiver co-channel rejection

### 4.2.11.1 Definition

The receiver co-channel rejection is defined in EN 301 929-1 [8], clause 9.5.1.

### 4.2.11.2 Limits

The receiver co-channel rejection limit shall be as stated in EN 301 929-1 [8], clause 9.5.3.

### 4.2.11.3 Conformance

Conformance tests as defined in clause 5.4.3 may be carried out.

## 4.2.12 Receiver adjacent channel selectivity

### 4.2.12.1 Definition

The receiver adjacent channel selectivity is defined in EN 301 929-1 [8], clause 9.6.1.

### 4.2.12.2 Limit

The receiver adjacent channel selectivity limit shall be as stated in EN 301 929-1 [8], clause 9.6.3.

### 4.2.12.3 Conformance

Conformance tests as defined in clause 5.4.4 may be carried out.

## 4.2.13 Receiver spurious response

### 4.2.13.1 Definition

The receiver spurious response rejection is defined in EN 301 929-1 [8], clause 9.7.1.

### 4.2.13.2 Limit

The receiver spurious response rejection limit shall be as stated in EN 301 929-1 [8], clause 9.7.3.

### 4.2.13.3 Conformance

Conformance tests as defined in clause 5.4.5 may be carried out.

## 4.2.14 Receiver intermodulation response

### 4.2.14.1 Definition

The intermodulation response is defined in EN 301 929-1 [8], clause 9.8.1 for the receiver and in EN 301 929-1 [8], clause 9.20.1, for the DSC receiver.

### 4.2.14.2 Limit

The intermodulation response limit shall be as stated in EN 301 929-1 [8], clause 9.8.3 for the receiver and in EN 301 929-1 [8], clause 9.20.3, for the DSC receiver.

### 4.2.14.3 Conformance

Conformance tests as defined in clause 5.4.6 may be carried out.

## 4.2.15 Receiver blocking or desensitization

### 4.2.15.1 Definition

Blocking is defined in EN 301 929-1 [8], clause 9.9.1.

### 4.2.15.2 Limit

The receiver blocking or desensitization limit shall be as stated in EN 301 929-1 [8], clause 9.9.3.

### 4.2.15.3 Conformance

Conformance tests as defined in clause 5.4.7 may be carried out.

## 4.2.16 Receiver spurious emissions at the antenna

### 4.2.16.1 Definition

Spurious emissions are defined in EN 301 929-1 [8], clause 9.11.1.

### 4.2.16.2 Limit

The spurious emissions at the antenna limit shall be as stated in EN 301 929-1 [8], clause 9.11.2.2.

#### 4.2.16.3 Conformance

Conformance tests as defined in clause 5.4.8 may be carried out.

### 4.2.17 Receiver cabinet radiated spurious emissions

#### 4.2.17.1 Definition

Spurious emissions are defined in EN 301 929-1 [8], clause 9.11.1.

#### 4.2.17.2 Limit

The cabinet radiated spurious emissions limit shall be as stated in EN 301 929-1 [8], clause 9.11.3.2.

#### 4.2.17.3 Conformance

Conformance tests as defined in clause 5.4.9 may be carried out.

### 4.2.18 DSC receiver maximum usable sensitivity

#### 4.2.18.1 Definition

The maximum usable sensitivity of the DSC receiver is defined in EN 301 929-1 [8], clause 9.13.1.

#### 4.2.18.2 Limit

The DSC receiver maximum usable sensitivity limit shall be as stated in EN 301 929-1 [8], clause 9.13.3.

#### 4.2.18.3 Conformance

Conformance tests as defined in clause 5.4.10 may be carried out.

### 4.2.19 DSC receiver co-channel rejection

#### 4.2.19.1 Definition

The co-channel rejection of the DSC receiver is defined in EN 301 929-1 [8], clause 9.14.1.

#### 4.2.19.2 Limit

The DSC receiver co-channel rejection limit shall be as stated in EN 301 929-1 [8], clause 9.14.3.

#### 4.2.19.3 Conformance

Conformance tests as defined in clause 5.4.11 may be carried out.

### 4.2.20 DSC receiver adjacent channel selectivity

#### 4.2.20.1 Definition

The adjacent channel selectivity of the DSC receiver is defined in EN 301 929-1 [8], clause 9.15.1.

#### 4.2.20.2 Limit

The DSC receiver adjacent channel selectivity limit shall be as stated in EN 301 929-1 [8], clause 9.15.3.

#### 4.2.20.3 Conformance

Conformance tests as defined in clause 5.4.12 may be carried out.

#### 4.2.21 Receiver desensitization with simultaneous transmission and reception (duplex operation)

##### 4.2.21.1 Definition

The receiver desensitization with simultaneous transmission and reception is defined in EN 301 929-1 [8], clause 9.17.2.1.

##### 4.2.21.2 Limit

The receiver desensitization with simultaneous transmission and reception limit shall be as stated in EN 301 929-1 [8], clause 9.17.2.3.

##### 4.2.21.3 Conformance

Conformance tests as defined in clause 5.4.13 may be carried out.

---

## 5 Testing for compliance with technical requirements

### 5.1 Test conditions, power supply and ambient temperatures

These shall be as described in EN 301 929-1 [8], clauses 6.1 to 6.8 and 7.1 to 7.5.

### 5.2 Interpretation of the measurement results

The interpretation of the results recorded in a test report for the measurements described in the present document shall be as follows:

- the measured value related to the corresponding limit will be used to decide whether an equipment meets the requirements of the present document;
- the value of the measurement uncertainty for the measurement of each parameter shall be included in the test report;
- the recorded value of the measurement uncertainty shall be, for each measurement, equal to or lower than the figures in table 1.

For the test methods, according to the present document, the measurement uncertainty figures shall be calculated in accordance with ETR 028 [4] and shall correspond to an expansion factor (coverage factor)  $k = 1,96$  or  $k = 2$  (which provide confidence levels of respectively 95 % and 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Table 1 is based on such expansion factors.



**Table 1: Maximum measurement uncertainty  
(Valid up to 1GHz for the RF parameters unless otherwise stated)**

Parameter	Uncertainty
RF frequency	$\pm 1 \times 10^{-7}$
RF power	$\pm 0,75$ dB
Maximum frequency deviation:	
- within 300 Hz to 6 kHz of audio frequency	$\pm 5$ %
- within 6 kHz to 25 kHz of audio frequency	$\pm 3$ dB
Deviation limitation	$\pm 5$ %
Adjacent channel power	$\pm 5$ dB
Conducted spurious emissions of transmitter	$\pm 4$ dB
Conducted spurious emissions of transmitter, valid to 12,75 GHz	$\pm 7$ dB
Audio output power	$\pm 0,5$ dB
Sensitivity at 20 dB SINAD	$\pm 3$ dB
Conducted emission of receiver	$\pm 3$ dB
Conducted emission of receiver, valid to 12,75 GHz	$\pm 6$ dB
Two-signal measurement, valid to 4 GHz	$\pm 4$ dB
Three-signal measurement	$\pm 3$ dB
Radiated emissions of transmitter, valid to 4 GHz	$\pm 6$ dB
Radiated emissions of receiver, valid to 4 GHz	$\pm 6$ dB
Transmitter transient time	$\pm 20$ %
Transmitter transient frequency	$\pm 250$ Hz
Transmitter intermodulation	$\pm 3$ dB
Receiver desensitization (duplex operation)	$\pm 0,5$ dB

ETR 273 [6] provides further information concerning the usage of test sites.

## 5.3 Essential radio test suites

### 5.3.1 Transmitter frequency error

The test method specified in EN 301 929-1 [8], clause 8.1.2, shall be carried out. The results obtained shall be compared to the limits in clause 4.2.1.2 in order to prove compliance with the requirement.

### 5.3.2 Transmitter carrier power

The test method specified in EN 301 929-1 [8], clause 8.2.2, shall be carried out. The results obtained shall be compared to the limits in clause 4.2.2.2 in order to prove compliance with the requirement.

### 5.3.3 Transmitter frequency deviation

The test method specified in EN 301 929-1 [8], clause 8.3.2.1, shall be carried out. The results obtained shall be compared to the limits in clause 4.2.3.2 in order to prove compliance with the requirement.

### 5.3.4 Transmitter adjacent channel power

The test method specified in EN 301 929-1 [8], clause 8.6.2, shall be carried out. The results obtained shall be compared to the limits in clause 4.2.4.2 in order to prove compliance with the requirement.

### 5.3.5 Transmitter conducted spurious emissions conveyed to the antenna

The test method specified in EN 301 929-1 [8], clause 8.7.2, shall be carried out. The results obtained shall be compared to the limits in clause 4.2.5.2 in order to prove compliance with the requirement.

### 5.3.6 Transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna

The test method specified in EN 301 929-1 [8], clause 8.8.2, shall be carried out. The results obtained shall be compared to the limits in clause 4.2.6.2 in order to prove compliance with the requirement.

### 5.3.7 DSC transmitter modulation index

The test method specified in EN 301 929-1 [8], clause 8.10.2, shall be carried out. The results obtained shall be compared to the limits in clause 4.2.7.2 in order to prove compliance with the requirement.

### 5.3.8 Transient frequency behaviour of the transmitter

The test method specified in EN 301 929-1 [8], clause 8.13.2, shall be carried out. The results obtained shall be compared to the limits in clause 4.2.8.2 in order to prove compliance with the requirement.

### 5.3.9 Intermodulation attenuation

The test method specified in EN 301 929-1 [8], clause 8.14.2 shall be carried out. The results obtained shall be compared to the limits in clause 4.2.9.2 in order to prove compliance with the requirement.

## 5.4 Other test specifications

### 5.4.1 General

The requirements in clauses 4.2.9 to 4.2.19 inclusive have been set on the assumption that the test specifications in clauses 5.4.2 to 5.4.13 will be used to verify the performance of the equipment.

### 5.4.2 Receiver maximum usable sensitivity

The test method specified in EN 301 929-1 [8], clause 9.4.2, applies. The results obtained shall be compared to the limits in clause 4.2.9.2 in order to prove compliance with the requirement.

### 5.4.3 Receiver co-channel rejection

The test method specified in EN 301 929-1 [8], clause 9.5.2, applies. The results obtained shall be compared to the limits in clause 4.2.10.2 in order to prove compliance with the requirement.

### 5.4.4 Receiver adjacent channel selectivity

The test method specified in EN 301 929-1 [8], clause 9.6.2, applies. The results obtained shall be compared to the limits in clause 4.2.11.2 in order to prove compliance with the requirement.

### 5.4.5 Receiver spurious response

The test method specified in EN 301 929-1 [8], clause 9.7.2, applies. The results obtained shall be compared to the limits in clause 4.2.11.2 in order to prove compliance with the requirement.

### 5.4.6 Receiver intermodulation response

The test method specified in EN 301 929-1 [8], clause 9.8.2, for the receiver and 9.20.2 for the DSC receiver applies. The results obtained shall be compared to the limits in clause 4.2.12.2 in order to prove compliance with the requirement.

### 5.4.7 Receiver blocking or desensitization

The test method specified in EN 301 929-1 [8], clause 9.9.2, applies. The results obtained shall be compared to the limits in clause 4.2.13.2 in order to prove compliance with the requirement.

### 5.4.8 Receiver spurious emissions at the antenna

The test methods specified in EN 301 929-1 [8], clause 9.11.2.1, applies. The results obtained shall be compared to the limits in clause 4.2.14.2 in order to prove compliance with the requirement.

### 5.4.9 Receiver cabinet radiated spurious emissions

The test methods specified in EN 301 929-1 [8], clause 9.11.3.1, applies. The results obtained shall be compared to the limits in clause 4.2.15.2 in order to prove compliance with the requirement.

### 5.4.10 DSC receiver maximum usable sensitivity

The test methods specified in EN 301 929-1 [8], clause 9.13.2, applies. The results obtained shall be compared to the limits in clause 4.2.16.2 in order to prove compliance with the requirement.

### 5.4.11 DSC receiver co-channel rejection

The test methods specified in EN 301 929-1 [8], clause 9.14.2, applies. The results obtained shall be compared to the limits in clause 4.2.17.2 in order to prove compliance with the requirement.

### 5.4.12 DSC receiver adjacent channel selectivity

The test methods specified in EN 301 929-1 [8], clause 9.15.2, applies. The results obtained shall be compared to the limits in clause 4.2.18.2 in order to prove compliance with the requirement.

### 5.4.13 Receiver desensitization with simultaneous transmission and reception (duplex operation)

The test methods specified in EN 301 929-1 [8], clause 9.17.2.2, applies. The results obtained shall be compared to the limits in clause 4.2.19.2 in order to prove compliance with the requirement.

## Annex A (normative): The EN Requirements Table (EN-RT)

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the EN-RT proforma in this annex so that it can be used for its intended purposes and may further publish the completed EN-RT.

The EN Requirements Table (EN-RT) serves a number of purposes, as follows:

- it provides a tabular summary of all the requirements;
- it shows the status of each EN-R, whether it is essential to implement in all circumstances (Mandatory), or whether the requirement is dependent on the supplier having chosen to support a particular optional service or functionality (Optional). In particular it enables the EN-Rs associated with a particular optional service or functionality to be grouped and identified;
- when completed in respect of a particular equipment it provides a means to undertake the static assessment of conformity with the EN.

**Table A.1: EN Requirements Table (EN-RT)**

EN Reference		EN 301 929-2				Comment
No.	Reference	EN-R (see note)	Status			
1	4.2.1	Transmitter frequency error	M			
2	4.2.2	Transmitter carrier power	M			
3	4.2.3	Transmitter frequency deviation	M			
4	4.2.4	Transmitter adjacent channel power	M			
5	4.2.5	Transmitter conducted spurious emissions conveyed to the antenna	M			
6	4.2.6	Transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna	M			
7	4.2.7	DSC transmitter modulation index	M			
8	4.2.8	Transient frequency behaviour of the transmitter	M			
9	4.2.9	Receiver Intermodulation Attenuation	M			
10	4.2.10	Receiver maximum usable sensitivity	M			
11	4.2.11	Receiver co-channel rejection	M			
12	4.2.12	Receiver adjacent channel selectivity	M			
13	4.2.13	Receiver spurious response	M			
14	4.2.14	Receiver intermodulation response	M			
15	4.2.15	Receiver blocking or desensitization	M			
16	4.2.16	Receiver spurious emissions at the antenna	M			
17	4.2.17	Receiver cabinet radiated spurious emissions	M			
18	4.2.18	DSC receiver maximum usable sensitivity	O.1			If DSC is implemented

EN Reference		EN 301 929-2				Comment
No.	Reference	EN-R (see note)	Status			
19	4.2.19	DSC receiver co-channel rejection	O.1			If DSC is implemented
20	4.2.20	DSC receiver adjacent channel selectivity	O.1			If DSC is implemented
21	4.2.21	Receiver desensitization with simultaneous transmission and reception (duplex working)	O.1			If DSC is implemented

NOTE: These EN-Rs are justified under article 3.2 of the R&TTE Directive.

**Key to columns:**

<b>No</b>	Table entry number;
<b>Reference</b>	Clause reference number of conformance requirement within the present document;
<b>EN-R</b>	Title of conformance requirement within the present document;
<b>Status</b>	Status of the entry as follows: M Mandatory, shall be implemented under all circumstances; O Optional, may be provided, but if provided shall be implemented in accordance with the requirements; O.n this status is used for mutually exclusive or selectable options among a set. The integer "n" shall refer to a unique group of options within the EN-RT. A footnote to the EN-RT shall explicitly state what the requirement is for each numbered group. For example, "It is mandatory to support at least one of these options", or, "It is mandatory to support exactly one of these options".
<b>Comments</b>	To be completed as required.

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## Annex B (informative): The EN title in the official languages

Language	EN title
Danish	
Dutch	
English	Electromagnetic compatibility and Radio Spectrum Matters (ERM); VHF transmitters and receivers as Coast Stations for GMDSS and other applications in the maritime mobile service; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
Finnish	
French	
German	
Greek	
Icelandic	
Italian	
Portuguese	
Spanish	
Swedish	

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## History

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V1.1.1	November 2001	Vote	V 20020111: 2001-11-12 to 2002-01-11