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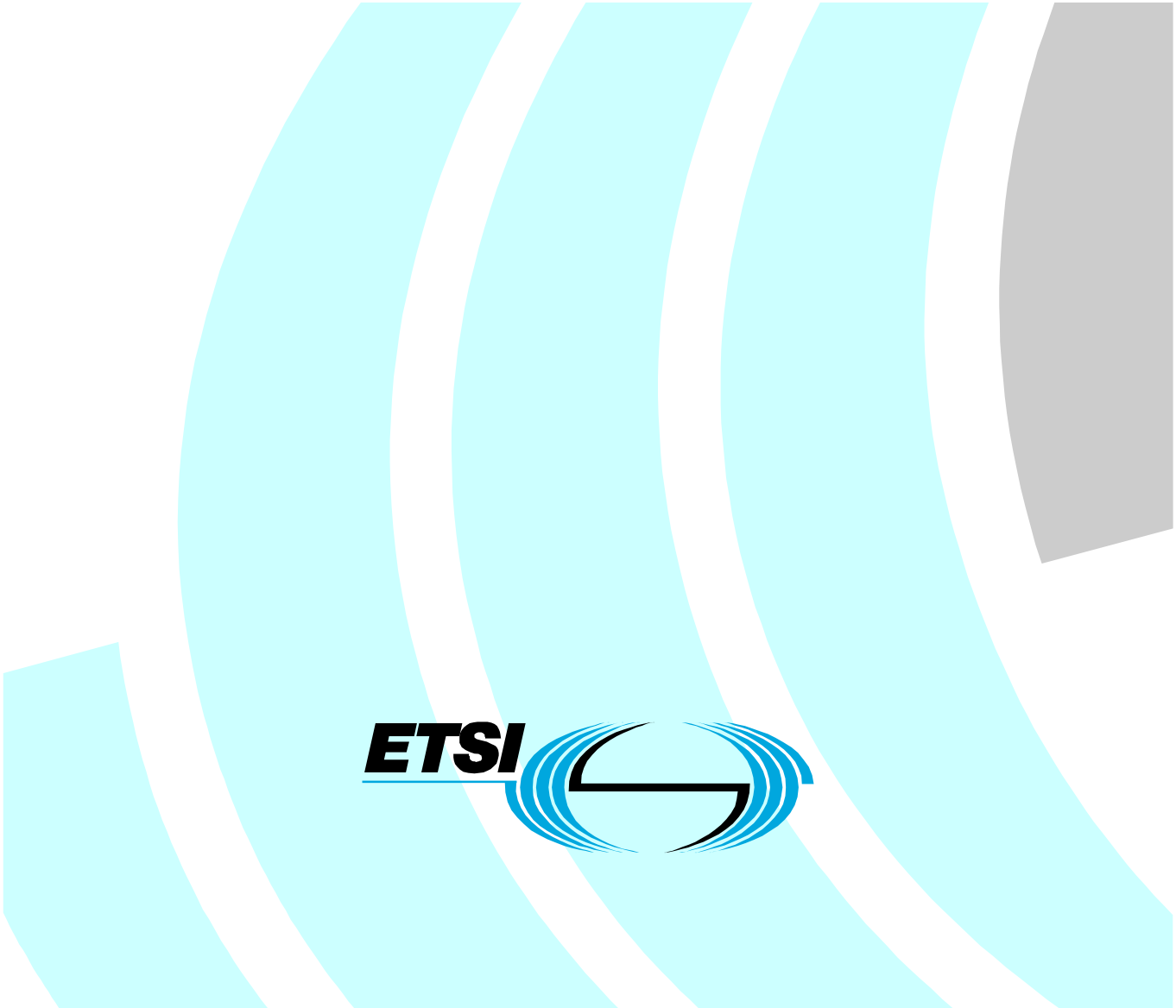
Harmonized European Standard (Telecommunications series)

Electromagnetic compatibility and Radio spectrum Matters (ERM); Ultra-High Frequency (UHF) on-board communications systems and equipment; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive



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Foreword

This 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 ETSI standards One-step Approval Procedure.

The present document is part 2 of a multi-part deliverable covering Electromagnetic compatibility and Radio spectrum Matters (ERM); Ultra-High Frequency (UHF) on-board communications systems and equipment, as identified below:

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

Part 2: "Harmonized EN under article 3.2 of the R&TTE Directive" [1].

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC [4] (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") [1].

Technical specifications relevant to Directive 1999/5/EC are given in annex A.

Proposed national transposition dates	
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

1 Scope

The present document specifies the minimum technical characteristics required for UHF on board vessels radio equipment and systems operating on frequencies allocated to the maritime mobile services by the ITU Radio Regulations [5].

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] may 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.}

2 References

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

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

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

[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 (R&TTE Directive).

[2] ETSI EN 300 720-1 (V1.3.1): "Electromagnetic compatibility and Radio Spectrum Matters (ERM); Ultra-High Frequency (UHF) on-board communications systems and equipment; Part 1: Technical characteristics and methods of measurement".

[3] ETSI TR 100 028: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".

[4] 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.

[5] ITU-R Recommendation M.1174-2 (05/2004): "Technical characteristics of equipment used for on-board vessel communications in the bands between 450 and 470 MHz".

3 Definitions, symbols 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 with the provisions of the present document

supplier: entity referred to in the R&TTE Directive [1] responsible for the placing on the market of an equipment within the scope of the Directive

3.2 Symbols

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

emf	electromotive force

3.3 Abbreviations

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

R&TTE	Radio and Telecommunications Terminal Equipment
RF	Radio Frequency
UHF	Ultra 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 transmitter frequency error shall be as defined in EN 300 720-1 [2], clause 8.1.1.

4.2.1.2 Limit

The transmitter frequency error limit shall be as stated in EN 300 720-1 [2], 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 maximum effective radiated power

4.2.2.1 Definition

The transmitter maximum effective radiated power shall be as defined in EN 300 720-1 [2], clause 8.2.1.

4.2.2.2 Limit

The transmitter maximum effective radiated power limit shall be as stated in EN 300 720-1 [2], 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 shall be as defined in EN 300 720-1 [2], clause 8.3.1.

4.2.3.2 Limit

The transmitter frequency deviation limit shall be as stated in EN 300 720-1 [2], 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 Frequency deviation at modulation frequencies above 3 kHz

4.2.4.1 Definition

The transmitter frequency deviation shall be as defined in EN 300 720-1 [2], clause 8.3.1.

4.2.4.2 Limit

The transmitter frequency deviation limit shall be as stated in EN 300 720-1 [2], clause 8.3.3.2, figure 1.

4.2.4.3 Conformance

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

4.2.5 Transmitter adjacent channel power

4.2.5.1 Definition

The transmitter adjacent channel power shall be as defined in EN 300 720-1 [2], clause 8.8.1.

4.2.5.2 Limit

The transmitter adjacent channel power limit shall be as stated in EN 300 720-1 [2], clause 8.8.3.

4.2.5.3 Conformance

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

4.2.6 Transient frequency behaviour of the transmitter

4.2.6.1 Definition

The transient frequency behaviour of the transmitter shall be as defined in EN 300 720-1 [2], clause 8.10.1.

4.2.6.2 Limit

The transient frequency behaviour of the transmitter limit shall be as stated in EN 300 720-1 [2], clause 8.10.3.

4.2.6.3 Conformance

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

4.2.7 Transmitter conducted spurious emissions conveyed to the antenna

4.2.7.1 Definition

The transmitter conducted spurious emissions conveyed to the antenna shall be as defined in EN 300 720-1 [2], clause 8.11.1.

4.2.7.2 Limit

The transmitter conducted spurious emissions conveyed to the antenna limit shall be as stated in EN 300 720-1 [2], clause 8.11.3.

4.2.7.3 Conformance

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

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

4.2.8.1 Definition

The transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna shall be as defined in EN 300 720-1 [2], clause 8.12.1.

4.2.8.2 Limit

The transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna limit shall be as stated in EN 300 720-1 [2], clause 8.12.3.

4.2.8.3 Conformance

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

4.2.9 Receiver maximum usable sensitivity

4.2.9.1 Definition

The receiver maximum usable sensitivity shall be as defined in EN 300 720-1 [2], clause 9.3.1.

4.2.9.2 Limit

The receiver maximum usable sensitivity limit shall be as stated in EN 300 720-1 [2], clause 9.3.3.

4.2.9.3 Conformance

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

4.2.10 Receiver co-channel rejection

4.2.10.1 Definition

The receiver co-channel rejection shall be as defined in EN 300 720-1 [2], clause 9.4.1.

4.2.10.2 Limit

The receiver co-channel rejection limit shall be as stated in EN 300 720-1 [2], clause 9.4.3.

4.2.10.3 Conformance

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

4.2.11 Receiver adjacent channel selectivity

4.2.11.1 Definition

The receiver adjacent channel selectivity shall be as defined in EN 300 720-1 [2], clause 9.5.1.

4.2.11.2 Limit

The receiver adjacent channel selectivity limit shall be as stated in EN 300 720-1 [2], clause 9.5.3.

4.2.11.3 Conformance

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

4.2.12 Receiver spurious response rejection

4.2.12.1 Definition

The receiver spurious response rejection shall be as defined in EN 300 720-1 [2], clause 9.6.1.

4.2.12.2 Limit

The receiver spurious response rejection limit shall be as stated in EN 300 720-1 [2], clause 9.6.3.

4.2.12.3 Conformance

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

4.2.13 Receiver intermodulation response

4.2.13.1 Definition

The receiver intermodulation response shall be as defined in EN 300 720-1 [2], clause 9.7.1.

4.2.13.2 Limit

The receiver intermodulation response limit shall be as stated in EN 300 720-1 [2], clause 9.7.3.

4.2.13.3 Conformance

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

4.2.14 Receiver blocking or desensitization

4.2.14.1 Definition

The receiver blocking or desensitization shall be as defined in EN 300 720-1 [2], clause 9.8.1.

4.2.14.2 Limit

The receiver blocking or desensitization limit shall be as stated in EN 300 720-1 [2], clause 9.8.3.

4.2.14.3 Conformance

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

4.2.15 Receiver conducted spurious emissions conveyed to the antenna

4.2.15.1 Definition

The receiver conducted spurious emissions conveyed to the antenna shall be as defined in EN 300 720-1 [2], clause 9.9.1.

4.2.15.2 Limit

The receiver conducted spurious emissions conveyed to the antenna limit shall be as stated in EN 300 720-1 [2], clause 9.9.3.

4.2.15.3 Conformance

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

4.2.16 Receiver radiated spurious emissions

4.2.16.1 Definition

The receiver radiated spurious emissions shall be as defined in EN 300 720-1 [2], clause 9.10.1.

4.2.16.2 Limit

The receiver radiated spurious emissions limit shall be as stated in EN 300 720-1 [2], clause 9.10.3.

4.2.16.3 Conformance

Conformance tests as defined in clause 5.4.9 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 300 720-1 [2], clause 5 and clauses 6.1 to 6.6.

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 TR 100 028 [3] 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: Absolute measurement uncertainties: maximum values

Parameter	Maximum uncertainty
RF frequency	±1 x 10^{-7}
RF power	±0,75 dB
Maximum frequency deviation: - within 300 Hz to 6 kHz of modulation frequency - within 6 kHz to 25 kHz of modulation frequency	 ±5 % ±3 dB
Deviation limitation	±5 %
Adjacent channel power	±5 dB
Radiated emission of transmitter	±6 dB
Radiated emission of receiver	±6 dB
Two-signal measurement	±4 dB
Three-signal measurement	±3 dB
Conducted spurious emission of transmitter	±4 dB
Conducted emission of receiver	±3 dB
Transmitter transient time	±20 %
Transmitter transient frequency	±250 Hz

5.3 Essential radio test suites

5.3.1 Transmitter frequency error

The test specified in EN 300 720-1 [2], clause 8.1.2 shall be performed. 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 maximum effective radiated power

The test specified in EN 300 720-1 [2], clause 8.2.2 shall be performed. 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 specified in EN 300 720-1 [2], clause 8.3.2.1 shall be performed. 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 Frequency deviation at modulation frequencies above 3 kHz

The test specified in EN 300 720-1 [2], clause 8.3.3.1 shall be performed. 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 adjacent channel power

The test specified in EN 300 720-1 [2], clause 8.8.2 shall be performed. 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 Transient behaviour of the transmitter

The test specified in EN 300 720-1 [2], clause 8.10.2 shall be performed. 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 Transmitter conducted spurious emissions conveyed to the antenna

The test specified in EN 300 720-1 [2], clause 8.11.2 shall be performed. 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 Transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna

The test specified in EN 300 720-1 [2], clause 8.12.2 shall be performed. The results obtained shall be compared to the limits in clause 4.2.8.2 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 4.2.16 inclusive have been set on the assumption that the test specifications in clauses 5.4.2 to 5.4.9 will be used to verify the performance of the equipment.

5.4.2 Receiver maximum usable sensitivity

The test specified in EN 300 720-1 [2], clause 9.3.2 shall be performed. 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 specified in EN 300 720-1 [2], clause 9.4.2 shall be performed. 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 specified in EN 300 720-1 [2], clause 9.5.2 shall be performed. 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 rejection

The test specified in EN 300 720-1 [2], clause 9.6.2 shall be performed. The results obtained shall be compared to the limits in clause 4.2.12.2 in order to prove compliance with the requirement.

5.4.6 Receiver intermodulation response

The test specified in EN 300 720-1 [2], clause 9.7.2 shall be performed. The results obtained shall be compared to the limits in clause 4.2.13.2 in order to prove compliance with the requirement.

5.4.7 Receiver blocking or desensitization

The test specified in EN 300 720-1 [2], clause 9.8.2 shall be performed. The results obtained shall be compared to the limits in clause 4.2.14.2 in order to prove compliance with the requirement.

5.4.8 Receiver conducted spurious emissions conveyed to the antenna

The test specified in EN 300 720-1 [2], clause 9.9.2 shall be performed. The results obtained shall be compared to the limits in clause 4.2.15.2 in order to prove compliance with the requirement.

5.4.9 Receiver radiated spurious emissions

The test specified in EN 300 720-1 [2], clause 9.10.2 shall be performed. The results obtained shall be compared to the limits in clause 4.2.16.2 in order to prove compliance with the requirement.

Annex A (normative): HS Requirements and conformance Test specifications Table (HS-RTT)

The HS Requirements and conformance Test specifications Table (HS-RTT) in table A.1 serves a number of purposes, as follows:

- it provides a statement of all the essential requirements in words and by cross reference to (a) specific clause(s) in the present document or to (a) specific clause(s) in (a) specific referenced document(s);
- it provides a statement of all the test procedure corresponding to those essential requirements by cross reference to (a) specific clause(s) in the present document or to (a) specific clause(s) in (a) specific referenced document(s);
- it qualifies each requirement to be either:
  - Unconditional: meaning that the requirement applies in all circumstances, or
  - Conditional: meaning that the requirement is dependent on the supplier having chosen to support optional functionality defined within the schedule;
- in the case of Conditional requirements, it associates the requirement with the particular optional service or functionality;
- it qualifies each test procedure to be either:
  - Essential: meaning that it is included with the Essential Radio Test Suite and therefore the requirement shall be demonstrated to be met in accordance with the referenced procedures;
  - Other: meaning that the test procedure is illustrative but other means of demonstrating compliance with the requirement are permitted.

Table A.1: HS Requirements and conformance Test specifications Table (HS-RTT)

Harmonized Standard EN 300 720-2 The following technical requirements and test specifications are relevant to the presumption of conformity under Article 3.2 of the R&TTE Directive						
Essential Requirement			**Requirement Conditionality**		**Test Specification**	
No	**Description**	**Reference: Clause No**	**U/C**	**Condition**	**E/O**	**Reference: Clause No**
1	Transmitter frequency error	4.2.1	U		E	5.3.1
2	Transmitter carrier power	4.2.2	U		E	5.3.2
3	Transmitter frequency deviation	4.2.3	U		E	5.3.3
4	Frequency deviation at modulation frequencies above 3 kHz	4.2.4	U		E	5.3.4
5	Transmitter adjacent channel power	4.2.5	U		E	5.3.5
6	Transient frequency behaviour of the transmitter	4.2.6	U		E	5.3.6
7	Transmitter conducted spurious emissions conveyed to the antenna	4.2.7	U		E	5.3.7
8	Transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna	4.2.8	U		E	5.3.8
9	Receiver maximum usable sensitivity	4.2.9	U		O	5.4.2

Harmonized Standard EN 300 720-2 The following technical requirements and test specifications are relevant to the presumption of conformity under Article 3.2 of the R&TTE Directive						
Essential Requirement			**Requirement Conditionality**		**Test Specification**	
No	**Description**	**Reference: Clause No**	**U/C**	**Condition**	**E/O**	**Reference: Clause No**
10	Receiver co-channel rejection	4.2.10	U		O	5.4.3
11	Receiver adjacent channel selectivity	4.2.11	U		O	5.4.4
12	Receiver spurious response rejection	4.2.12	U		O	5.4.5
13	Receiver intermodulation response	4.2.13	U		O	5.4.6
14	Receiver blocking or desensitization	4.2.14	U		O	5.4.7
15	Receiver conducted spurious emissions conveyed to the antenna	4.2.15	U		O	5.4.8
16	Receiver radiated spurious emissions	4.2.16	U		O	5.4.9

Key to columns:

Essential Requirement:

No A unique identifier for one row of the table which may be used to identify a requirement or its test specification.

Description A textual reference to the requirement.

Clause Number Identification of clause(s) defining the requirement in the present document unless another document is referenced explicitly.

Requirement Conditionality:

U/C Indicates whether the requirement is to be *unconditionally* applicable (U) or is *conditional* upon the manufacturers claimed functionality of the equipment (C).

Condition Explains the conditions when the requirement shall or shall not be applicable for a technical requirement which is classified "conditional".

Test Specification:

E/O Indicates whether the test specification forms part of the Essential Radio Test Suite (E) or whether it is one of the Other Test Suite (O).

NOTE: All tests whether "E" or "O" are relevant to the requirements. Rows designated "E" collectively make up the Essential Radio Test Suite; those designated "O" make up the Other Test Suite; for those designated "X" there is no test specified corresponding to the requirement. The completion of all tests classified "E" as specified with satisfactory outcomes is a necessary condition for a presumption of conformity. Compliance with requirements associated with tests classified "O" or "X" is a necessary condition for presumption of conformity, although conformance with the requirement may be claimed by an equivalent test or by manufacturer's assertion supported by appropriate entries in the technical construction file.

Clause Number Identification of clause(s) defining the test specification in the present document unless another document is referenced explicitly. Where no test is specified (that is, where the previous field is "X") this field remains blank.

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

Language	EN title
Bulgarian	Електромагнитна съвместимост и въпроси на радиоспектъра (ERM). Свръхвисокочестотни (UHF) бордови далекосъобщителни системи и съоръжения. Част 2: Хармонизиран европейски стандарт (EN) според член 3(2) от Директивата за радиосъоръжения и крайни далекосъобщителни устройства (R&TTED)
Czech	Elektromagnetická kompatibilita a rádiové spektrum (ERM); Palubní komunikační systémy a zařízení pracující na velmi vysokých kmitočtech (UHF); Část 2: Harmonizovaná EN podle článku 3.2 Směrnice R&TTE
Danish	Elektromagnetisk kompatibilitet og Radiospektrum Anliggender (ERM); Indenbords Ultra Høj frekvens (UHF) kommunikationssystemer og –udstyr; Del 2: Harmoniseret EN, som dækker de væsentlige krav i R&TTE direktivets artikel 3.2
Dutch	Elektromagnetische compatibiliteit en radiospectrum zaken (ERM); UHF communicatiesystemen en apparatuur aan boord van vaartuigen; Deel 2: Geharmoniseerde EN welke invulling geeft aan de wezenlijke vereisten, neergelegd in artikel 3.2 va de R&TTE Directive
English	Electromagnetic compatibility and Radio spectrum Matters (ERM); Ultra-High Frequency (UHF) on-board communications systems and equipment; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
Estonian	Elektromagnetilise ühilduvuse ja raadiospektri küsimused (ERM); Ultrakõrgsageduse (UHF) pardaside süsteemid ja seadmed; Osa 2: Harmoneeritud EN R&TTE direktiivi artikli 3.2 alusel
Finnish	Sähkömagneettinen yhteensopivuus ja radiospektriasiat (ERM); Alusten sisäisen liikenteen UHF -järjestelmät ja laitteet; Osa 2: Harmonisoitu EN R&TTE - direktiivin artiklan 3.2 olennaisten vaatimusten mukaisesti
French	Compatibilité électromagnétique et spectre radioélectrique (ERM) - Systèmes et appareils de communications UHF embarqués - Partie 2: EN harmonisée couvrant l''article 3.2 de la Directive R&TTE
German	Elektromagnetische Verträglichkeit und Funkspektrumangelegenheiten (ERM); UHF-Sprechfunkanlagen für die Kommunikation an Bord von Schiffen; Teil 2: Harmonisierte Europäische Norm (EN) mit wesentlichen Anforderungen nach R&TTE-Richtlinie Artikel 3.2
Greek	
Hungarian	Elektromágneses összeférhetőségi és rádióspektrumügyek (ERM). Fedélzeti UHF-távközlőrendszerek és berendezések. 2. rész: Az R&TTE-irányelv 3.2. cikkelyének lényegi követelményeit tartalmazó harmonizált európai szabvány
Icelandic	Þættir sem varða rafsegulsviðssamhæfi og fjarskiptatíðni (ERM); Ofurtíðnifjarskiptakerfi (UHF) og búnaður til nota um borð; 2. hluti: Samræmdur Evrópustaðall skv. 2. mgr. 3. gr. í tilskipun 1999/5/EC um fjarskiptabúnað og endabúnað til fjarskipta
Italian	Compatibilità elettromagnetica e Questioni relative allo spettro delle radiofrequenze (ERM); sistemi ed apparati per comunicazioni UHF di bordo; Part 2: Norma Europea armonizzata per l'articolo 3.2 della direttiva R&TTE
Latvian	Elektromagnētiskā saderība un radiofrekvenču spektra jautājumi (ERM) - Decimetru viļņu (UHF) borta sakaru sistēmas un iekārtas - 2.daļa: Harmonizēts Eiropas standarts (EN), kas atbilst R&TTE Direktīvas 3.2.panta būtiskām prasībām
Lithuanian	Elektromagnetinio suderinamumo ir radijo dažnių spektro dalykai. Ultraaukštųjų dažnių (UAD) borto ryšių sistemos ir įranga. 2 dalis. Darnusis Europos standartas pagal 1999/5/EC* direktyvos 3.2 straipsnį
Maltese	Kompatibilità elettromanjetika u materji relatati ma' spettru radjofoniku (ERM); Sistemi u tagħmir ta'' komunikazzjoni abbord li jopera fuq Frekwenza Ultra-Għolja (UHF); Parti 2: EM armonizzat taħt l-artiklu 3.2 tad-Direttiva R&TTE
Norwegian	Elektromagnetisk kompatibilitet og radiospektrumspørsmål (ERM); Ultrahøyfrekvens (UHF) ombordkommunikasjonssystemer og -utstyr; Del 2: Harmonisert EN under R&TTE-direktivets artikkel 3.2
Polish	Kompatybilność Elektromagnetyczna i Zagadnienia Widma Radiowego (ERM) - Pokładowe urządzenia i systemy komunikacyjne pracujące w zakresie UHF - Część 2: EN zharmonizowana zgodnie z artykułem 3.2 dyrektywy R&TTE
Portuguese	Assuntos de Espectro Radioeléctrico e Compatibilidade Electromagnética (ERM); Equipamentos e sistemas de comunicação em UHF a bordo; Parte 2: EN harmonizada cobrindo os requisitos essenciais no âmbito do Artigo 3.2 da Directiva R&TTE
Romanian	Compatibilitate electromagnetică şi probleme ale spectrului radio (ERM); Sisteme şi echipamente de comunicaţii la bord pe ultra înaltă frecvenţă (UHF) – Partea 2: EN armonizat acoperind cerinţele esenţiale ale Articolului 3(2) al Directivei R&TTE
Slovak	Elektromagnetická kompatibilita a záležitosti rádiového spektra (ERM). Palubné komunikačné systémy a zariadenia s ultravysokými frekvenciami (UHF). Časť 2: Harmonizovaná EN podľa článku 3.2 smernice R&TTE

Language	EN title
Slovenian	Elektromagnetna združljivost (EMC) in zadeve v zvezi z radijskim spektrom (ERM) – Komunikacijski sistemi in oprema UHF za uporabo na krovu – 2. del: Harmonizirani EN v skladu s členom 3.2 direktive R&TTE
Spanish	Compatibilidad electromagnética y cuestiones de espectro de radiofrecuencia (ERM); Sistemas y equipos de comunicaciones a bordo de frecuencia Ultra-Alta (UHF); Parte 2: EN armonizada cubriendo los requisitos esenciales según el artículo 3.2 de la directiva de R&TTE
Swedish	Elektromagnetisk kompatibilitet och radio-spektrumfrågor (ERM); Kommunikationssystem och utrustning på UHF för användning ombord; Del 2: Harmoniserad EN enligt artikel 3.2 i R&TTE-direktivet

History

Document history		
V1.1.1	August 2000	Publication
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