



**Electromagnetic compatibility and  
Radio spectrum Matters (ERM);  
Portable Very High Frequency (VHF) radiotelephone  
equipment for the maritime mobile service operating  
in the VHF bands with integrated handheld class D DSC;  
Part 2: Harmonized EN covering the essential requirements  
of article 3.2 of the R&TTE Directive**

---

**Reference**

REN/ERM-TG26-104-2

---

**Keywords**

DSC, maritime, radio, VHF

**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

---

**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://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:

[http://portal.etsi.org/chaicor/ETSI\\_support.asp](http://portal.etsi.org/chaicor/ETSI_support.asp)

---

**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 2013.  
All rights reserved.

**DECT™**, **PLUGTESTS™**, **UMTS™** and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.  
**3GPP™** and **LTE™** are Trade Marks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.  
**GSM®** and the GSM logo are Trade Marks registered and owned by the GSM Association.

# Contents

Intellectual Property Rights .....	6
Foreword.....	6
Introduction .....	6
1 Scope .....	7
2 References .....	7
2.1 Normative references .....	7
2.2 Informative references.....	7
3 Definitions and abbreviations.....	8
3.1 Definitions .....	8
3.2 Abbreviations .....	8
4 Technical requirements specifications .....	8
4.1 Environmental profile.....	8
4.2 Conformance requirements .....	8
4.2.1 Transmitter frequency error .....	8
4.2.1.1 Definition .....	8
4.2.1.2 Limit.....	8
4.2.1.3 Conformance.....	8
4.2.2 Transmitter carrier power .....	9
4.2.2.1 Definition .....	9
4.2.2.2 Limit.....	9
4.2.2.3 Conformance.....	9
4.2.3 Maximum transmitter frequency deviation.....	9
4.2.3.1 Definition .....	9
4.2.3.2 Limit.....	9
4.2.3.3 Conformance.....	9
4.2.4 Reduction of frequency deviation at modulation frequencies above 3 kHz.....	9
4.2.4.1 Definition .....	9
4.2.4.2 Limit.....	9
4.2.4.3 Conformance.....	9
4.2.5 Transmitter adjacent channel power .....	9
4.2.5.1 Definition .....	9
4.2.5.2 Limit.....	9
4.2.5.3 Conformance.....	10
4.2.6 Transmitter conducted spurious emissions conveyed to the antenna.....	10
4.2.6.1 Definition .....	10
4.2.6.2 Limit.....	10
4.2.6.3 Conformance.....	10
4.2.7 Transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna .....	10
4.2.7.1 Definition .....	10
4.2.7.2 Limit.....	10
4.2.7.3 Conformance.....	10
4.2.8 Transient frequency behaviour of the transmitter .....	10
4.2.8.1 Definition .....	10
4.2.8.2 Limit.....	10
4.2.8.3 Conformance.....	10
4.2.9 DSC frequency error (demodulated DSC signal).....	10
4.2.9.1 Definition .....	10
4.2.9.2 Limit.....	11
4.2.9.3 Conformance.....	11
4.2.10 DSC modulation index.....	11
4.2.10.1 Definition .....	11
4.2.10.2 Limit.....	11

4.2.10.3	Conformance .....	11
4.2.11	DSC modulation rate .....	11
4.2.11.1	Definition .....	11
4.2.11.2	Limit .....	11
4.2.11.3	Conformance .....	11
4.2.12	Testing of free channel transmission on DSC channel 70 .....	11
4.2.12.1	Definition .....	11
4.2.12.2	Limit .....	11
4.2.12.3	Conformance .....	11
4.2.13	Receiver maximum usable sensitivity .....	11
4.2.13.1	Definition .....	11
4.2.13.2	Limit .....	12
4.2.13.3	Conformance .....	12
4.2.14	Receiver co-channel rejection .....	12
4.2.14.1	Definition .....	12
4.2.14.2	Limit .....	12
4.2.14.3	Conformance .....	12
4.2.15	Receiver adjacent channel selectivity .....	12
4.2.15.1	Definition .....	12
4.2.15.2	Limit .....	12
4.2.15.3	Conformance .....	12
4.2.16	Receiver spurious response rejection .....	12
4.2.16.1	Definition .....	12
4.2.16.2	Limit .....	12
4.2.16.3	Conformance .....	12
4.2.17	Receiver intermodulation response .....	12
4.2.17.1	Definition .....	12
4.2.17.2	Limit .....	13
4.2.17.3	Conformance .....	13
4.2.18	Receiver blocking or desensitization .....	13
4.2.18.1	Definition .....	13
4.2.18.2	Limit .....	13
4.2.18.3	Conformance .....	13
4.2.19	Receiver conducted spurious emissions .....	13
4.2.19.1	Definition .....	13
4.2.19.2	Limit .....	13
4.2.19.3	Conformance .....	13
4.2.20	Receiver radiated spurious emissions .....	13
4.2.20.1	Definition .....	13
4.2.20.2	Limit .....	13
4.2.20.3	Conformance .....	13
5	Testing for compliance with technical requirements .....	14
5.1	Test conditions, power supply and ambient temperatures .....	14
5.2	Interpretation of the measurement results .....	14
5.3	Essential radio test suites .....	14
5.3.1	Transmitter frequency error .....	14
5.3.2	Transmitter carrier power .....	15
5.3.3	Maximum transmitter frequency deviation .....	15
5.3.4	Reduction of frequency deviation at modulation frequencies above 3 kHz .....	15
5.3.5	Transmitter adjacent channel power .....	15
5.3.6	Transmitter conducted spurious emissions conveyed to the antenna .....	15
5.3.7	Transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna .....	15
5.3.8	Transient frequency behaviour of the transmitter .....	15
5.3.9	DSC frequency error (demodulated DSC signal) .....	15
5.3.10	DSC modulation index .....	15
5.3.11	DSC modulation rate .....	15
5.3.12	Testing of free channel transmission on DSC channel 70 .....	15
5.4	Other test specifications .....	16
5.4.1	General .....	16
5.4.2	Receiver maximum usable sensitivity .....	16

5.4.3	Receiver co-channel rejection.....	16
5.4.4	Receiver adjacent channel selectivity .....	16
5.4.5	Receiver spurious response rejection.....	16
5.4.6	Receiver intermodulation response.....	16
5.4.7	Receiver blocking or desensitization .....	16
5.4.8	Receiver conducted spurious emissions.....	16
5.4.9	Receiver radiated spurious emissions .....	16
<b>Annex A (normative):</b>	<b>HS Requirements and conformance Test specifications Table (HS-RTT).....</b>	<b>17</b>
<b>Annex B:</b>	<b>Void .....</b>	<b>20</b>
History .....		21

---

## 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://ipr.etsi.org>).

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 draft Harmonized European Standard (EN) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM), and is now submitted for the combined Public Enquiry and Vote phase of the ETSI standards EN Approval Procedure.

The present document has been produced by ETSI in response to the European Commission mandate M/284 issued under Directive 98/34/EC [i.2] as amended by Directive 98/48/EC [i.5].

The title and reference to the present document are intended to be included in the publication in the Official Journal of the European Union of titles and references of Harmonized Standard under the Directive 1999/5/EC [i.1].

See article 5.1 of Directive 1999/5/EC [i.1] for information on presumption of conformity and Harmonized Standards or parts thereof the references of which have been published in the Official Journal of the European Union.

The requirements relevant to Directive 1999/5/EC [i.1] are summarized in annex A.

The present document is part 2 of a multi-part deliverable covering the Electromagnetic compatibility and Radio spectrum Matters (ERM); Portable Very High Frequency (VHF) radiotelephone equipment for the maritime mobile service operating in the VHF bands with integrated handheld class D DSC, as identified below:

- Part 1: "Technical characteristics and methods of measurement";
- Part 2: "Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive";**
- Part 3: "Harmonized EN covering the essential requirements of article 3.3(e) of the R&TTE Directive".

<b>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 developed by ETSI and is designed to fit in a modular structure to cover all radio and telecommunications terminal equipment within the scope of the R&TTE Directive [i.1]. The modular structure is shown in EG 201 399 [i.4].

---

# 1 Scope

The present document states the minimum technical characteristics and methods of measurement required for portable Very High Frequency (VHF) radiotelephones with integrated handheld class D DSC operating in certain frequency bands allocated to the maritime mobile service using either 25 kHz channels or 25 kHz and 12,5 kHz channels.

The present document also specifies technical characteristics, methods of measurement and required test results.

---

## 2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) 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.

### 2.1 Normative references

The following referenced documents are necessary for the application of the present document.

- [1] ETSI EN 302 885-1 (V1.3.0) (05-2013): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Portable Very High Frequency (VHF) radiotelephone equipment for the maritime mobile service operating in the VHF bands with integrated handheld class D DSC; Part 1: Technical characteristics and methods of measurement".
- [2] ETSI TR 100 028-1 (V1.4.1) (12-2001): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1".

### 2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.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).
- [i.2] 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.
- [i.3] EC Decision 2004/71/EC of 4 September 2003 on essential requirements relating to marine radio communication equipment which is intended to be used on non-SOLAS vessels and to participate in the Global Maritime Distress and Safety System (GMDSS).
- [i.4] ETSI EG 201 399: "Electromagnetic compatibility and Radio spectrum Matters (ERM); A guide to the production of Harmonized Standards for application under the R&TTE Directive".
- [i.5] Directive 98/48/EC of the European Parliament and of the Council of 20 July 1998 amending Directive 98/34/EC laying down a procedure for the provision of information in the field of technical standards and regulations.

---

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in the R&TTE Directive [i.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 [i.1] responsible for the placing on the market of an equipment within the scope of the Directive

### 3.2 Abbreviations

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

GMDSS	Global Maritime Distress and Safety System
R&TTE	Radio and Telecommunications Terminal Equipment
VHF	Very High Frequency

---

## 4 Technical requirements specifications

### 4.1 Environmental profile

Tests defined in the present document shall be carried out at representative points within the boundary limits of the declared operational environmental profile which, as a minimum, shall be that specified in the test conditions contained in the present document.

As technical performance varies subject to environmental conditions, tests shall be carried out under a sufficient variety of environmental conditions as specified in the present document to give confidence of compliance for the affected technical requirements. These environmental conditions represent those required by article 2 of EC Decision 2004/71/EC [i.3] (which shall also be within the boundary limits of the declared 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 302 885-1 [1], clause 8.1.1.

##### 4.2.1.2 Limit

The transmitter frequency error limit shall be as stated in EN 302 885-1 [1], 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 shall be as defined in EN 302 885-1 [1], clause 8.2.1.

### 4.2.2.2 Limit

The transmitter carrier power limit shall be as stated in EN 302 885-1 [1], 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 Maximum transmitter frequency deviation

### 4.2.3.1 Definition

The transmitter frequency deviation shall be as defined in EN 302 885-1 [1], clause 8.3.1.

### 4.2.3.2 Limit

The maximum transmitter frequency deviation limit shall be as stated in EN 302 885-1 [1], 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 Reduction of frequency deviation at modulation frequencies above 3 kHz

### 4.2.4.1 Definition

The frequency deviation shall be as defined in EN 302 885-1 [1], clause 8.3.1.

### 4.2.4.2 Limit

The reduction of frequency deviation at modulation frequencies above 3 kHz shall be as stated in EN 302 885-1 [1], clause 8.3.3.2.

### 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 302 885-1 [1], clause 8.7.1.

### 4.2.5.2 Limit

The transmitter adjacent channel power limit shall be as stated in EN 302 885-1 [1], 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 conducted spurious emissions conveyed to the antenna

### 4.2.6.1 Definition

The transmitter conducted spurious emissions conveyed to the antenna shall be as defined in EN 302 885-1 [1], clause 8.8.1.

### 4.2.6.2 Limit

The transmitter conducted emissions conveyed to the antenna limit shall be as stated in EN 302 885-1 [1], 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 Transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna

### 4.2.7.1 Definition

The transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna shall be as defined in EN 302 885-1 [1], clause 8.9.1.

### 4.2.7.2 Limit

The transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna limit shall be as stated in EN 302 885-1 [1], clause 8.9.3.

### 4.2.7.3 Conformance

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

## 4.2.8 Transient frequency behaviour of the transmitter

### 4.2.8.1 Definition

The transient frequency behaviour of the transmitter shall be as defined in EN 302 885-1 [1], clause 8.11.1.

### 4.2.8.2 Limit

The transmitter frequency behaviour of the transmitter limit shall be as stated in EN 302 885-1 [1], clause 8.11.3.

### 4.2.8.3 Conformance

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

## 4.2.9 DSC frequency error (demodulated DSC signal)

### 4.2.9.1 Definition

The DSC frequency error is defined in EN 302 885-1 [1], clause 8.12.1.

#### 4.2.9.2 Limit

The DSC frequency error limit shall be as stated in EN 302 885-1 [1], clause 8.12.3.

#### 4.2.9.3 Conformance

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

### 4.2.10 DSC modulation index

#### 4.2.10.1 Definition

The DSC modulation index is defined in EN 302 885-1 [1], clause 8.13.1.

#### 4.2.10.2 Limit

The DSC modulation index limit shall be as stated in EN 302 885-1 [1], clause 8.13.3.

#### 4.2.10.3 Conformance

Conformance tests as defined in clause 5.3.10 shall be carried out.

### 4.2.11 DSC modulation rate

#### 4.2.11.1 Definition

The DSC modulation rate is defined in EN 302 885-1 [1], clause 8.14.1.

#### 4.2.11.2 Limit

The DSC modulation rate limit shall be as stated in EN 302 885-1 [1], clause 8.14.3.

#### 4.2.11.3 Conformance

Conformance tests as defined in clause 5.3.11 shall be carried out.

### 4.2.12 Testing of free channel transmission on DSC channel 70

#### 4.2.12.1 Definition

This test is defined in EN 302 885-1 [1], clause 8.15.1.

#### 4.2.12.2 Limit

The functionality shall be as stated in EN 302 885-1 [1], clause 8.15.3.

#### 4.2.12.3 Conformance

Conformance tests as defined in clause 5.3.12 shall be carried out.

### 4.2.13 Receiver maximum usable sensitivity

#### 4.2.13.1 Definition

The receiver maximum usable sensitivity shall be as defined in EN 302 885-1 [1], clause 9.3.1.

#### 4.2.13.2 Limit

The receiver maximum usable sensitivity limit shall be as stated in EN 302 885-1 [1], clause 9.3.3.

#### 4.2.13.3 Conformance

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

### 4.2.14 Receiver co-channel rejection

#### 4.2.14.1 Definition

The receiver co-channel rejection shall be as defined in EN 302 885-1 [1], clause 9.4.1.

#### 4.2.14.2 Limit

The receiver co-channel rejection limit shall be as stated in EN 302 885-1 [1], clause 9.4.3.

#### 4.2.14.3 Conformance

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

### 4.2.15 Receiver adjacent channel selectivity

#### 4.2.15.1 Definition

The receiver adjacent channel selectivity shall be as defined in EN 302 885-1 [1], clause 9.5.1.

#### 4.2.15.2 Limit

The receiver adjacent channel selectivity limit shall be as stated in EN 302 885-1 [1], clause 9.5.3.

#### 4.2.15.3 Conformance

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

### 4.2.16 Receiver spurious response rejection

#### 4.2.16.1 Definition

The receiver spurious response rejection shall be as defined in EN 302 885-1 [1], clause 9.6.1.

#### 4.2.16.2 Limit

The receiver spurious response rejection limit shall be as stated in EN 302 885-1 [1], clause 9.6.3.

#### 4.2.16.3 Conformance

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

### 4.2.17 Receiver intermodulation response

#### 4.2.17.1 Definition

The receiver intermodulation response shall be as defined in EN 302 885-1 [1], clause 9.7.1.

#### 4.2.17.2 Limit

The receiver intermodulation response limit shall be as stated in EN 302 885-1 [1], clause 9.7.3.

#### 4.2.17.3 Conformance

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

### 4.2.18 Receiver blocking or desensitization

#### 4.2.18.1 Definition

The receiver blocking or desensitization shall be as defined in EN 302 885-1 [1], clause 9.8.1.

#### 4.2.18.2 Limit

The receiver blocking or desensitization limit shall be as stated in EN 302 885-1 [1], clause 9.8.3.

#### 4.2.18.3 Conformance

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

### 4.2.19 Receiver conducted spurious emissions

#### 4.2.19.1 Definition

The receiver conducted spurious emissions shall be as defined in EN 302 885-1 [1], clause 9.9.1.

#### 4.2.19.2 Limit

The receiver conducted spurious emissions limit shall be as stated in EN 302 885-1 [1], clause 9.9.3.

#### 4.2.19.3 Conformance

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

### 4.2.20 Receiver radiated spurious emissions

#### 4.2.20.1 Definition

The receiver radiated spurious emissions shall be as defined in EN 302 885-1 [1], clause 9.10.1.

#### 4.2.20.2 Limit

The receiver radiated spurious emissions limit shall be as stated in EN 302 885-1 [1], clause 9.10.3.

#### 4.2.20.3 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 stated in EN 302 885-1 [1], clauses 6.1 to 6.7 and clauses 6.9 to 6.12.

### 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 100 028-1 [2] 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	$\pm 1 \times 10^{-7}$
RF power	$\pm 0,75$ dB
Maximum frequency deviation:	
- within 300 Hz to 6 kHz of modulation frequency	$\pm 5$ %
- within 6 kHz to 25 kHz of modulation frequency	$\pm 3$ dB
Deviation limitation	$\pm 5$ %
Adjacent channel power	$\pm 5$ dB
Conducted spurious emission of transmitter	$\pm 4$ dB
Conducted emission of receiver	$\pm 3$ dB
Two-signal measurement	$\pm 4$ dB
Three-signal measurement	$\pm 3$ dB
Radiated emission of transmitter	$\pm 6$ dB
Radiated emission of receiver	$\pm 6$ dB
Transmitter transient time	$\pm 20$ %
Transmitter transient frequency	$\pm 250$ Hz
Receiver desensitization (duplex operation)	$\pm 0,5$ dB

### 5.3 Essential radio test suites

#### 5.3.1 Transmitter frequency error

The test specified in EN 302 885-1 [1], 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 specified in EN 302 885-1 [1], 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 Maximum transmitter frequency deviation

The tests specified in EN 302 885-1 [1], 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 Reduction of frequency deviation at modulation frequencies above 3 kHz

The tests specified in EN 302 885-1 [1], clause 8.3.3.1 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 adjacent channel power

The test specified in EN 302 885-1 [1], 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 conducted spurious emissions conveyed to the antenna

The test specified in EN 302 885-1 [1], 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 Transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna

The test specified in EN 302 885-1 [1], clause 8.9.2 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 specified in EN 302 885-1 [1], clause 8.11.2 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 DSC frequency error (demodulated DSC signal)

The test specified in EN 302 885-1 [1], clause 8.12.2 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.

### 5.3.10 DSC modulation index

The test specified in EN 302 885-1 [1], clause 8.13.2 shall be carried out. The results obtained shall be compared to the limits in clause 4.2.10.2 in order to prove compliance with the requirement.

### 5.3.11 DSC modulation rate

The test specified in EN 302 885-1 [1], clause 8.14.2 shall be carried out. The results obtained shall be compared to the limits in clause 4.2.11.2 in order to prove compliance with the requirement.

### 5.3.12 Testing of free channel transmission on DSC channel 70

The test specified in EN 302 885-1 [1], clause 8.15.2 shall be carried out. 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 Other test specifications

### 5.4.1 General

The requirements in clauses 4.2.13 to 4.2.20 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 302 885-1 [1], clause 9.3.2 shall be carried out. The results obtained shall be compared to the limits in clause 4.2.13.2 in order to prove compliance with the requirement.

### 5.4.3 Receiver co-channel rejection

The test specified in EN 302 885-1 [1], clause 9.4.2 shall be carried out. The results obtained shall be compared to the limits in clause 4.2.14.2 in order to prove compliance with the requirement.

### 5.4.4 Receiver adjacent channel selectivity

The test specified in EN 302 885-1 [1], clause 9.5.2 shall be carried out. The results obtained shall be compared to the limits in clause 4.2.15.2 in order to prove compliance with the requirement.

### 5.4.5 Receiver spurious response rejection

The test specified in EN 302 885-1 [1], clause 9.6.2 shall be carried out. The results obtained shall be compared to the limits in clause 4.2.16.2 in order to prove compliance with the requirement.

### 5.4.6 Receiver intermodulation response

The test specified in EN 302 885-1 [1], clause 9.7.2 shall be carried out. The results obtained shall be compared to the limits in clause 4.2.17.2 in order to prove compliance with the requirement.

### 5.4.7 Receiver blocking or desensitization

The test specified in EN 302 885-1 [1], clause 9.8.2 shall be carried out. The results obtained shall be compared to the limits in clause 4.2.18.2 in order to prove compliance with the requirement.

### 5.4.8 Receiver conducted spurious emissions

The test specified in EN 302 885-1 [1], clause 9.9.2 shall be carried out. The results obtained shall be compared to the limits in clause 4.2.19.2 in order to prove compliance with the requirement.

### 5.4.9 Receiver radiated spurious emissions

The test specified in EN 302 885-1 [1], clause 9.10.2 shall be carried out. The results obtained shall be compared to the limits in clause 4.2.20.2 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 technical 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 procedures corresponding to those technical 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 technical requirement to be either:
  - Unconditional: meaning that technical the requirement applies in all circumstances; or
  - Conditional: meaning that the technical requirement is dependent on the manufacturer having chosen to support optional functionality defined within the schedule.
- in the case of Conditional technical requirements, it associates the technical 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 technical 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 technical requirement are permitted.

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

<b>Harmonized Standard EN 302 885-2</b>						
The following technical requirements and test specifications are relevant to the presumption of conformity under article 3.2 of the R&TTE Directive [i.1]						
<b>Technical Requirement</b>			<b>Technical Requirement Conditionality</b>		<b>Test Specification</b>	
<b>No</b>	<b>Description</b>	<b>Reference: Clause No</b>	<b>U/C</b>	<b>Condition</b>	<b>E/O</b>	<b>Reference: Clause No</b>
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	Maximum transmitter frequency deviation	4.2.3	U		E	5.3.3
4	Reduction of 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 conducted spurious conveyed to the antenna	4.2.6	U		E	5.3.6
7	Transmitter cabinet radiation and conducted spurious emissions other than those conveyed to the antenna	4.2.7	U		E	5.3.7
8	Transient frequency behaviour of the transmitter	4.2.8	U		E	5.3.8
9	DSC frequency error	4.2.9	U		E	5.3.9
10	DSC modulation index	4.2.10	U		E	5.3.10
11	DSC modulation rate	4.2.11	U		E	5.3.11
12	Testing of free channel transmission on DSC channel 70	4.2.12	U		E	5.3.12
13	Receiver maximum usable sensitivity	4.2.13	U		O	5.4.2
14	Receiver co-channel rejection	4.2.14	U		O	5.4.3
15	Receiver adjacent channel selectivity	4.2.15	U		O	5.4.4
16	Receiver spurious response rejection	4.2.16	U		O	5.4.5
17	Receiver intermodulation response	4.2.17	U		O	5.4.6
18	Receiver blocking or desensitization	4.2.18	U		O	5.4.7
19	Receiver conducted spurious emissions	4.2.19	U		O	5.4.8
20	Receiver radiated spurious emissions	4.2.20	U		O	5.4.9

**Key to columns:****Technical Requirement:**

<b>No</b>	A unique identifier for one row of the table which may be used to identify a technical requirement or its test specification.
<b>Description</b>	A textual reference to the technical requirement.
<b>Clause Number</b>	Identification of clause(s) defining the technical requirement in the present document unless another document is referenced explicitly.

**Technical Requirement Conditionality:**

<b>U/C</b>	Indicates whether the technical requirement is to be <i>unconditionally</i> applicable (U) or is <i>conditional</i> upon the manufacturers claimed functionality of the equipment (C).
<b>Condition</b>	Explains the conditions when the technical requirement shall or shall not be applicable for a technical requirement which is classified "conditional".

**Test Specification:**

<b>E/O</b>	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 technical 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 technical requirement. The completion of all tests classified "E" as specified with satisfactory outcomes is a necessary condition for a presumption of conformity. Compliance with technical requirements associated with tests classified "O" or "X" is a necessary condition for presumption of conformity, although conformance with the technical requirement may be claimed by an equivalent test or by manufacturer's assertion supported by appropriate entries in the technical construction file.

<b>Clause Number</b>	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:  
Void

---

## History

<b>Document history</b>		
V1.1.1	September 2011	Publication
V1.2.0	May 2013	EN Approval Procedure AP 20130913: 2013-05-16 to 2013-09-13