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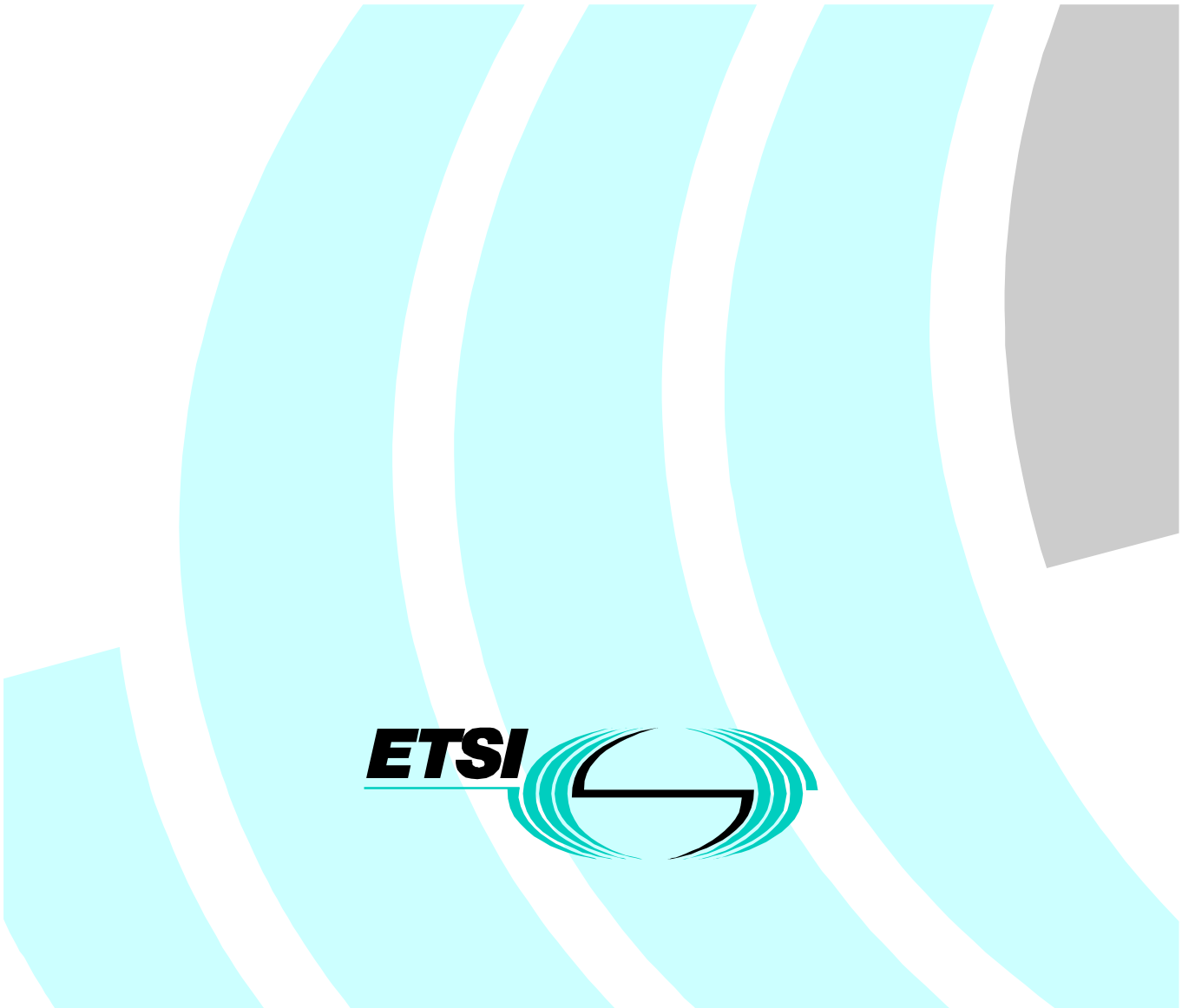
ETSI EN 300 433-2 V1.1.2 (2000-12)

Candidate Harmonized European Standard (Telecommunications series)

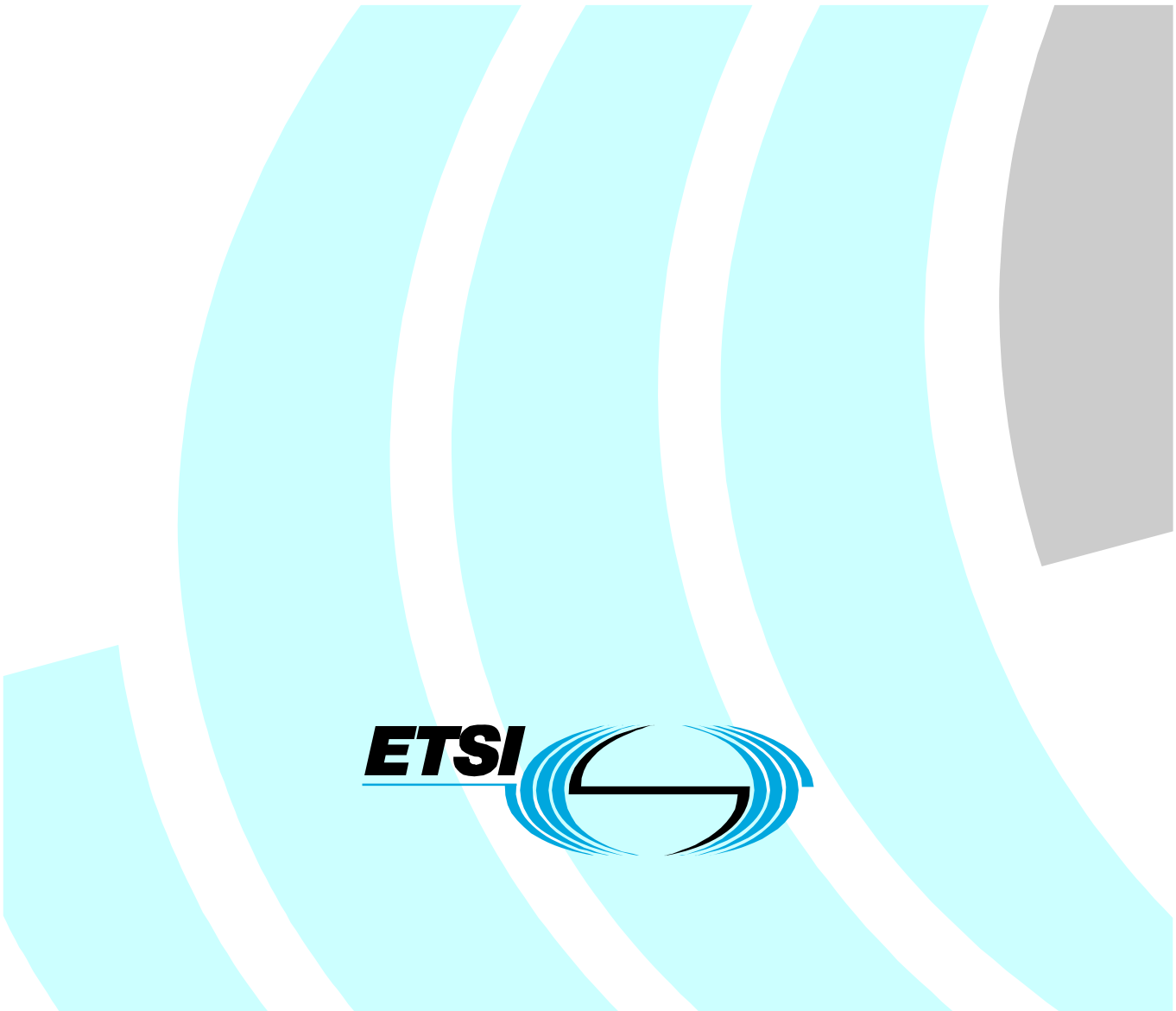
Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Double Side Band (DSB) and/or Single Side Band (SSB) amplitude modulated citizen's band radio equipment; Part 2: Harmonized EN covering essential requirements under article 3.2 of R&TTE Directive



ETSI EN 300 433-2 V1.3.1 (2011-07)

Harmonized European Standard

Electromagnetic compatibility and Radio spectrum Matters (ERM); Citizens' Band (CB) radio equipment; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive



Reference
REN/ERM-RP02-055-2

Keywords
CB, radio, testing, regulation

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REN/ERM-TGDMR-266-2

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CB, radio, regulation, testing

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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).

The present document is the second part of a multi-part standard, the titles of which are:

Part 1: Technical characteristics and methods of measurement;

Part 2: Harmonized EN covering essential requirements under article 3.2 of R&TTE Directive.

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC [5] 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 national regulations on Citizen's Band equipment that permit the use of other types of modulation or power levels will not necessarily be affected by the adption of this EN.

National transposition dates	
Date of latest announcement of this EN (doa):	31 March 2001
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 September 2001
Date of withdrawal of any conflicting National Standard (dow):	30 September 2002

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Foreword

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

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC [i.1] (as amended) laying down a procedure for the provision of information in the field of technical standards and regulations.

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.2].

See article 5.1 of Directive 1999/5/EC [i.2] for information on presumption of conformity and Harmonised 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.2] are summarised in annex A.

The present document is part 2 of a multi-part deliverable covering Citizens' Band (CB) radio equipment, 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"

Significant changes from the previous version of the harmonised standard are: the standard includes angle modulated CB equipment and the adaption of maximum transmitter power levels.

National transposition dates	
Date of adoption of this EN:	5 July 2011
Date of latest announcement of this EN (doa):	31 October 2011
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 April 2012
Date of withdrawal of any conflicting National Standard (dow):	30 April 2013

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.2]. The modular structure is shown in EG 201 399 [i.3].

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. Each standard is a module in the structure. The modular structure is shown in figure 1.

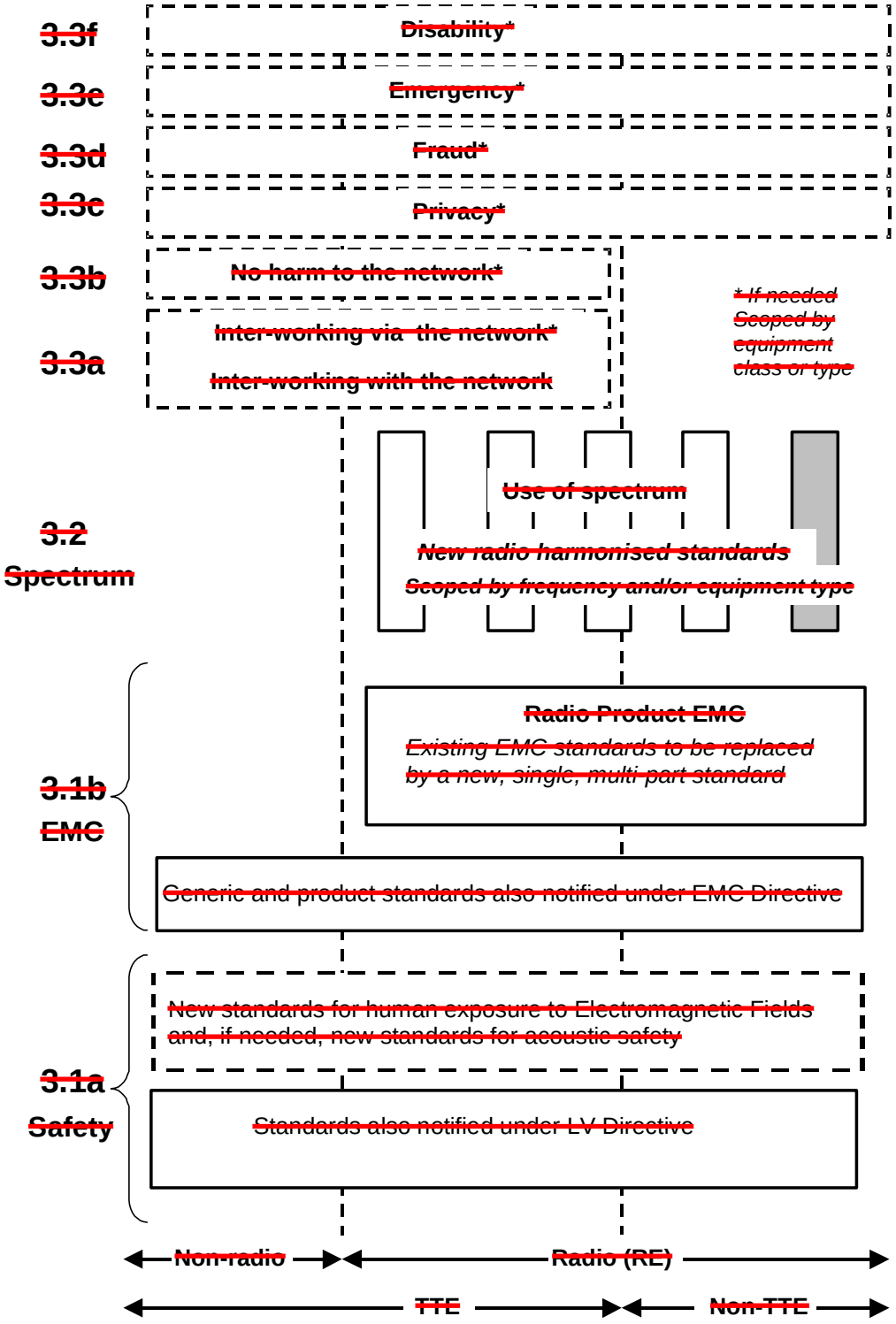

Figure 1: Modular structure for the various standards used under the R&TTE Directive

1 Scope

The present document covers the technical requirements for transmitters and receivers used in stations of angle modulated, Double Side Band (DSB) modulated and/or Single Side Band (SSB) modulated Citizens' Band (CB) radio equipment operating in all or part of the frequency band 26,960 MHz to 27,410 MHz with a channel spacing of 10 kHz, and intended for analogue speech and/or data transmission.

Citizens' Band radio equipment operation is in accordance with Draft ECC Decision on the harmonised use of frequencies for Citizens' Band (CB) radio equipment [i.5].

The equipment operates on one or more channels of the carrier frequencies as shown in table 1.

Table 1: Carrier frequencies

Carrier frequencies	Channel Number	Carrier frequencies	Channel Number
26,965 MHz	1	27,215 MHz	21
26,975 MHz	2	27,225 MHz	22
26,985 MHz	3	27,235 MHz	24
27,005 MHz	4	27,245 MHz	25
27,015 MHz	5	27,255 MHz	23
27,025 MHz	6	27,265 MHz	26
27,035 MHz	7	27,275 MHz	27
27,055 MHz	8	27,285 MHz	28
27,065 MHz	9	27,295 MHz	29
27,075 MHz	10	27,305 MHz	30
27,085 MHz	11	27,315 MHz	31
27,105 MHz	12	27,325 MHz	32
27,115 MHz	13	27,335 MHz	33
27,125 MHz	14	27,345 MHz	34
27,433 MHz	15	27,355 MHz	35
27,155 MHz	16	27,365 MHz	36
27,165 MHz	17	27,375 MHz	37
27,175 MHz	18	27,385 MHz	38
27,185 MHz	19	27,395 MHz	39
27,205 MHz	20	27,405 MHz	40

Transmission and reception takes place on the same channel (single frequency simplex mode).

Any equipment using national regulations on Citizens' Band (CB) permitting the use of channels outside of the carrier frequencies shown in table 1 within the frequency range from 26 MHz to 28 MHz can use the present document.

The types of equipment covered by the present document are as follows:

- Base station: equipment fitted with antenna connector;
- Mobile station: equipment fitted with antenna connector.
- Hand portable stations:
  a) Either fitted with an antenna connector; or
  b) Without an external antenna connector but fitted with a permanent internal or a temporary internal 50 ohm RF connector which allows access to the transmitter output and the receiver input.

Hand portable station equipment without an external or internal Radio Frequency (RF) connector and without the possibility of having a temporary internal 50 ohm RF connector is not covered by the present document.

The present document is intended to cover the provisions of Article 3.2, of Directive 1999/5/EC [i.2] (R&TTE Directive), 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."

The left hand edge of the figure 1 shows the different subclauses of Article 3 of the R&TTE Directive [1].

For article 3.3 various horizontal boxes are shown. Dotted lines indicate that at the time of publication of this standard 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 the new single multi-part product EMC standard for radio, and the existing collection of generic and product standards currently used under the EMC Directive [2]. The parts of this new standard will become available in the second half of 2000, and the existing separate product EMC standards will be used until it is available.

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 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 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.

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 [i.2] 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

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 300 433-1 (V1.3.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Citizens' Band (CB) radio equipment; Part 1: Technical characteristics and methods of measurement".

[2] ETSI TR 100 028 (V1.4.1) (all parts): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".

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 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.2] 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.3] ETSI EG 201 399 (V2.1.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); A guide to the production of candidate Harmonized Standards for application under the R&TTE Directive".

[i.4] ETSI EN 300 135-1 (V1.2.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Citizens' Band (CB) radio equipment; Angle-modulated Citizens' Band radio equipment (PR 27 Radio Equipment); Part 1: Technical characteristics and methods of measurement".

[i.5] FM38(10)37rev2: "Draft ECC/DEC/(11)XX on the harmonised use of frequencies for Citizens' Band (CB) radio equipment".

1 Scope

The present document applies to Double Side Band (DSB) and/or Single Side Band (SSB) amplitude modulated Citizens' Band (CB) radio equipment using the available bandwidth, operating on radio frequencies within the 27 MHz CB band, with channel separation of 10 kHz, intended for voice and data transmissions. It applies to analogue and combined analogue and digital radio equipment with an internal or external antenna connector intended for the transmission of data and/or speech.

The types of equipment covered by the present document are as follows:

- base station (equipment fitted with an antenna socket, intended for use in a fixed location);
- mobile station (equipment fitted with an antenna socket, normally used in a vehicle or as a transportable);
- and those handportable stations:
  a) fitted with an antenna socket; or
  b) without an external antenna socket (integral antenna equipment).

The present document is intended to cover the provisions of Article 3.2, of Directive 1999/5/EC [1] (R&TTE Directive), 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 may apply to equipment within the scope of the present document.

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 (R&TTE Directive).

[2] Council Directive of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (89/336/EEC) (EMC Directive).

[3] Council Directive of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (73/23/EEC) (LV Directive).

[4] ETSI EN 300 433-1 (V1.1.3). "Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Double Side Band (DSB) and/or Single Side Band (SSB)Amplitude modulated Citizen's Band radio Equipment; Part 1: Technical characteristics and methods of measurement".

[5] Council Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in EN 300 433-1 [1] apply.

3.2 Symbols

For the purposes of the present document, the symbols given in EN 300 433-1 [1] apply.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in EN 300 433-1 [1] apply.

4 Technical requirements

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 Transmitter requirements

4.2.1 Frequency error

4.2.1.1 Definition

The frequency error is defined in EN 300 433-1 [1], clause 7.1.1.

4.2.1.2 Limit

The frequency error shall not exceed the limit in EN 300 433-1 [1], clause 7.1.3.

4.2.1.3 Conformance

If the transmitter adjacent channels power (clause 5.3.4) has not been measured under extreme test conditions, then the conformance tests as defined in clause 5.3.1 shall be carried out.

4.2.2 Transmitter power

4.2.2.1 Definition

The transmitter power is defined in EN 300 433-1 [1], clause 7.2.1.

4.2.2.2 Limit

The transmitter power shall not exceed the limit in EN 300 433-1 [1], clause 7.2.3.

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 and EN 300 433-1 [4] apply.

3.2 Symbols

For the purposes of the present document, the symbols given in EN 300 433-1 [4] apply.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in EN 300 433-1 [4] and the following apply:

EMC	Electro-Magnetic Compatibility
LV	Low Voltage
R&TTE	Radio and Telecommunications Terminal Equipment

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> <declared by the supplier>. 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 Frequency error

4.2.1.1 Definition

The frequency error is defined in EN 300 433-1 [4], subclause 8.1.1.

4.2.1.2 Limit

The frequency error limit shall be as stated in EN 300 433-1 [4], subclause 5.2.1.

4.2.1.3 Conformance

Conformance tests as defined in subclause 5.2.1 shall be carried out.

4.2.2 Carrier power (conducted)

4.2.2.1 Definition

The carrier power (conducted) is defined in EN 300 433-1 [4], subclause 8.2.1.

4.2.2.3 Conformance

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

4.2.3 Maximum permissible frequency deviation

4.2.3.1 Definition

The maximum permissible frequency deviation is defined in EN 300 433-1 [1], clause 7.3.1.

4.2.3.2 Limit

The maximum permissible frequency deviation shall not exceed the limit in EN 300 433-1 [1], clause 7.3.3.

4.2.3.3 Conformance

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

4.2.4 Adjacent channel power

4.2.4.1 Definition

The adjacent channel power is defined in EN 300 433-1 [1], clause 7.4.1.

4.2.4.2 Limit

The adjacent channel power shall not exceed the limit in EN 300 433-1 [1], clause 7.4.3.

4.2.4.3 Conformance

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

4.2.5 Unwanted emissions in the spurious domain

4.2.5.1 Definition

The unwanted emissions in the spurious domain are defined in EN 300 433-1 [1], clause 7.5.1.

4.2.5.2 Limits

The unwanted emissions in the spurious domain shall not exceed the limits in EN 300 433-1 [1], clause 7.5.3, tables 2, 3 and 4.

4.2.5.3 Conformance

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

4.2.6 Transient behaviour of the transmitter

4.2.6.1 Definition

The transient behaviour of the transmitter is defined in EN 300 433-1 [1], clause 7.6.1.

4.2.6.2 Limits

The transient behaviour of the transmitter shall not exceed the limits in EN 300 433-1 [1], clause 7.6.3.

4.2.2.2 Limit

The carrier power (conducted)limit shall be as stated in EN 300 433-1 [4], subclause 5.2.2.

See also the last paragraph of the foreword of EN 300 433-1 [4].

4.2.2.3 Conformance

Conformance tests as defined in subclause 5.2.2 shall be carried out.

4.2.3 Effective radiated power

4.2.3.1 Definition

The effective radiated power is defined in EN 300 433-1 [4], subclause 8.2.1.

4.2.3.2 Limit

The effective radiated power limit shall be as stated in EN 300 433-1 [4], subclause 5.2.2.

4.2.3.3 Conformance

Conformance tests as defined in subclause 5.2.3 shall be carried out.

4.2.4 Adjacent channel power

4.2.4.1 Definition

The adjacent channel power is defined in EN 300 433-1 [4], subclause 8.3.1.

4.2.4.2 Limit

The adjacent channel power limit shall be as stated in EN 300 433-1 [4], subclause 5.2.3.

4.2.4.3 Conformance

Conformance tests as defined in subclause 5.2.4 shall be carried out.

4.2.5 Transmitter spurious emissions

4.2.5.1 Definition

The transmitter spurious emissions are defined in EN 300 433-1 [4], subclause 8.4.1.

4.2.5.2 Limit

The transmitter spurious emissions limit shall be as stated in EN 300 433-1 [4], subclause 5.2.4.

4.2.5.3 Conformance

Conformance tests as defined in subclause 5.2.5 shall be carried out.

4.2.6.3 Conformance

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

4.3 Receiver requirements

4.3.1 Spurious radiations

4.3.1.1 Definition

The spurious radiations are defined in EN 300 433-1 [1], clause 8.4.1.

4.3.1.2 Limits

The spurious radiations shall not exceed the limits in EN 300 433-1 [1], clause 8.4.3, tables 6 and 7.

4.3.1.3 Conformance

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

5 Testing for compliance with technical requirements

5.1 Environmental conditions for testing

Tests defined in the present document shall be carried out at representative points within the boundary limits of the declared operational environmental profile.

Where technical performance varies subject to environmental conditions, tests shall be carried out under a sufficient variety of environmental conditions (within the boundary limits of the declared operational environmental profile) to give confidence of compliance for the affected technical requirements.

5.1.1 Normal and extreme test-conditions

Measurements shall be made under normal test conditions, and also, where stated, under extreme test conditions.

The test conditions and procedures shall be as specified in EN 300 433-1 [1], clauses 5.3, 5.4 and 5.5.

5.1.2 Test power source

The test power source shall meet the requirements of EN 300 433-1 [1], clause 5.2.

5.1.3 Choice of samples for the measurements

Measurement shall be performed, according to the present document, on samples of equipment defined in EN 300 433-1 [1], clause 4.1.

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;

4.2.6 Transient frequency behaviour of the transmitter

4.2.6.1 Definition

The transient frequency behaviour of the transmitter is defined in EN 300 433-1 [4], subclause 8.5.1.

4.2.6.2 Limit

The transient frequency behaviour of the transmitter limit shall be as stated in EN 300 433-1 [4], subclause 5.2.5.

4.2.6.3 Conformance

Conformance tests as defined in subclause 5.2.6 shall be carried out.

4.2.7 Sensitivity

4.2.7.1 Definition

The sensitivity is defined in EN 300 433-1 [4], subclause 9.1.1 (conducted).

4.2.7.2 Limit

The sensitivity limit shall be as stated in EN 300 433-1 [4], subclause 5.3.1 (conducted).

4.2.7.3 Conformance

Conformance tests as defined in subclause 5.3.2 may be carried out.

4.2.8 Adjacent channel selectivity

4.2.8.1 Definition

The adjacent channel selectivity is defined in EN 300 433-1 [4], subclause 9.2.1.

4.2.8.2 Limit

The adjacent channel selectivity limit shall be as stated in EN 300 433-1 [4], subclause 5.3.2.

4.2.8.3 Conformance

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

4.2.9 Spurious response rejection

4.2.9.1 Definition

The spurious response rejection is defined in EN 300 433-1 [4], subclause 9.5.1.

4.2.9.2 Limit

The spurious response rejection limit shall be as stated in EN 300 433-1 [4], subclause 5.3.5.

4.2.9.3 Conformance

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

- the value of the measurement uncertainty for the measurement of each parameter shall be included in the test report;
- the value of the measurement uncertainty shall be, for each measurement, equal to or lower than the figures in clause 9 (table 9) of in EN 300 433-1 [1].

For the test methods, according to the present document, the measurement uncertainty figures shall be calculated in accordance with the principles of TR 100 028 [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)).

For the test methods according to the present document, the uncertainty figures are valid to a confidence level of 95 % calculated according to the methods described in TR 100 028 [2].

5.3 Essential test suites

Essential test suites are referred to in annex III of R&TTE Directive [i.2].

The following essential test suites shall be used to assess the performance of equipment.

5.3.1 Frequency error

If the transmitter adjacent channels power (clause 5.3.4) has not been measured under extreme test conditions, then the measurements specified in EN 300 433-1 [1], clause 7.1.2 shall be carried out.

5.3.2 Transmitter power

The measurements specified in EN 300 433-1 [1], clause 7.2.2 shall be carried out.

5.3.3 Maximum permissible frequency deviation

The measurements specified in EN 300 433-1 [1], clause 7.3.2 shall be carried out.

5.3.4 Adjacent channels power

The measurements specified in EN 300 433-1 [1], clause 7.4.2 shall be carried out.

5.3.5 Unwanted emissions in the spurious domain

The measurements specified in EN 300 433-1 [1], clause 7.5.2 shall be carried out.

5.3.6 Transient behaviour of the transmitter

The measurements specified in EN 300 433-1 [1], clause 7.6.2 shall be carried out.

5.3.7 Receiver spurious radiations

The measurements specified in EN 300 433-1 [1], clause 8.4.2 shall be carried out.

4.2.10 Intermodulation response rejection

4.2.10.1 Definition

The intermodulation response rejection is defined in EN 300 433-1 [4], subclause 9.3.1.

4.2.10.2 Limit

The intermodulation response rejection limit shall be as stated in EN 300 433-1 [4], subclause 5.3.3.

4.2.10.3 Conformance

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

4.2.11 Receiver spurious radiations

4.2.11.1 Definition

The receiver spurious radiations is defined in EN 300 433-1 [4], subclause 9.4.1.

4.2.11.2 Limit

The receiver spurious radiations limit shall be as stated in EN 300 433-1 [4], subclause 5.3.4.

4.2.11.3 Conformance

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

5 Testing for compliance with technical requirements

5.1 Test conditions, power supply and ambient temperatures

The test conditions and procedures shall be as defined in EN 300 433-1 [4], subclauses 6.1, 6.2, 6.3, 6.4 and 6.5.

5.2 Essential radio test suites

5.2.1 Frequency error

The test specified in EN 300 433-1 [4], subclause 8.1.2 shall be carried out. The results obtained shall be compared to the limits in subclause 4.2.1.2 in order to prove compliance with the requirement.

5.2.2 Carrier power (conducted)

The test specified in EN 300 433-1 [4], subclause 8.2.2 shall be carried out. The results obtained shall be compared to the limits in subclause 4.2.2.2 in order to prove compliance with the requirement.

5.2.3 Effective radiated power

The tests specified in EN 300 433-1 [4], subclause 8.2.3 shall be carried out. The results obtained shall be compared to the limits in subclause 4.2.3.2 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 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 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 dependant on the manufacturer 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 300 433-2 The following requirements and test specifications are relevant to the presumption of conformity under the article 3.2 of the R&TTE Directive [i.2]						
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	C	Does not apply if transmitter adjacent channels power is measured under extreme test conditions	E	5.3.1
2	Transmitterpower	4.2.2	U		E	5.3.2
3	Maximum permissible frequency deviation	4.2.3	U		E	5.3.3
4	Transmitter adjacent channels power	4.2.4	U		E	5.3.4
5	Transmitter unwanted emissions in the spurious domain	4.2.5	U		E	5.3.5
6	Transient behaviour of the transmitter	4.2.6	C	Applies only to equipment with cyclic keying during data transmission and having an external antenna connector	E	5.3.6
7	Receiver spurious radiations	4.3.1	U		E	5.3.7

5.2.4 Adjacent channel power

The tests specified in EN 300 433-1 [4], subclause 8.3.2 shall be carried out. The results obtained shall be compared to the limits in subclause 4.2.4.2 in order to prove compliance with the requirement.

5.2.5 Transmitter spurious emissions

The tests specified in EN 300 433-1 [4] subclause 8.4.2, subclause 8.4.3 and subclause 8.4.4 shall be carried out. The results obtained shall be compared to the limits in subclause 4.2.5.2 in order to prove compliance with the requirement.

5.2.6 Transient frequency behaviour of the transmitter

The tests specified in EN 300 433-1 [4], subclause 8.5.2 shall be carried out. The results obtained shall be compared to the limits in subclause 4.2.6.2 in order to prove compliance with the requirement.

5.3 Other test specifications

5.3.1 General

The requirements in subclauses 4.2.7 to 4.2.11 inclusive have been set on the assumption that the test specifications in subclauses 5.3.2 to 5.3.6 will be used to verify the performance of the equipment.

5.3.2 Sensitivity

The test specified in EN 300 433-1 [4], subclause 9.1.2 shall be carried out. The results obtained shall be compared to the limits in subclause 4.2.7.2 in order to prove compliance with the requirement.

5.3.3 Adjacent channel selectivity

The test specified in EN 300 433-1 [4], subclause 9.2.2 shall be carried out. The results obtained shall be compared to the limits in subclause 4.2.8.2 in order to prove compliance with the requirement.

5.3.4 Spurious response rejection

The test specified in EN 300 433-1 [4], subclause 9.5.2 shall be carried out. The results obtained shall be compared to the limits in subclause 4.2.9.2 in order to prove compliance with the requirement.

5.3.5 Intermodulation response rejection

The test specified in EN 300 433-1 [4], subclause 9.3.2 shall be carried out. The results obtained shall be compared to the limits in subclause 4.2.10.2 in order to prove compliance with the requirement.

5.3.6 Receiver spurious radiations

The test specified in EN 300 433-1 [4], subclauses 9.4.2, 9.4.3 and 9.4.4shall be carried out. The results obtained shall be compared to the limits in subclause 4.2.11.2 in order to prove compliance with the requirement.

Key to columns:

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 A (normative): The EN Requirements Table (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 300 433-2				Comment
No.	Reference	EN-R (note)	Status			
1	4.2.1	Frequency error	M			
2	4.2.2	Carrier power (conducted)	M			
3	4.2.3	Effective radiated power	M			
4	4.2.4	Adjacent channel power	M			
5	4.2.5	Transmitter spurious emissions	M			
6	4.2.6	Transient frequency behaviour of the transmitter	M			
7	4.2.7	Sensitivity	M			
8	4.2.8	Adjacent channel selectivity	M			
9	4.2.9	Spurious response rejection	M			
10	4.2.10	Intermodulation response rejection	M			
11	4.2.11	Receiver spurious radiations	M			
NOTE: These EN-Rs are justified under Article 3.2 of the R&TTE Directive.						

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

The enlargement of the European Union (EU) resulted in a requirement from the EU for a larger number of languages for the translation of the titles of Harmonized Standards and mandated ENs that are to be listed in the Official Journal to support the implementation of this legislation.

For this reason the title translation concerning the present document can be consulted via the e-approval application.

Key to columns:

No Table entry number;

Reference Subclause reference number of conformance requirement within the present document;

EN-R Title of conformance requirement within the present document;

Status 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".

Comments To be completed as required.

Annex C (informative): Bibliography

Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC (EMC Directive).

Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (LV Directive).

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