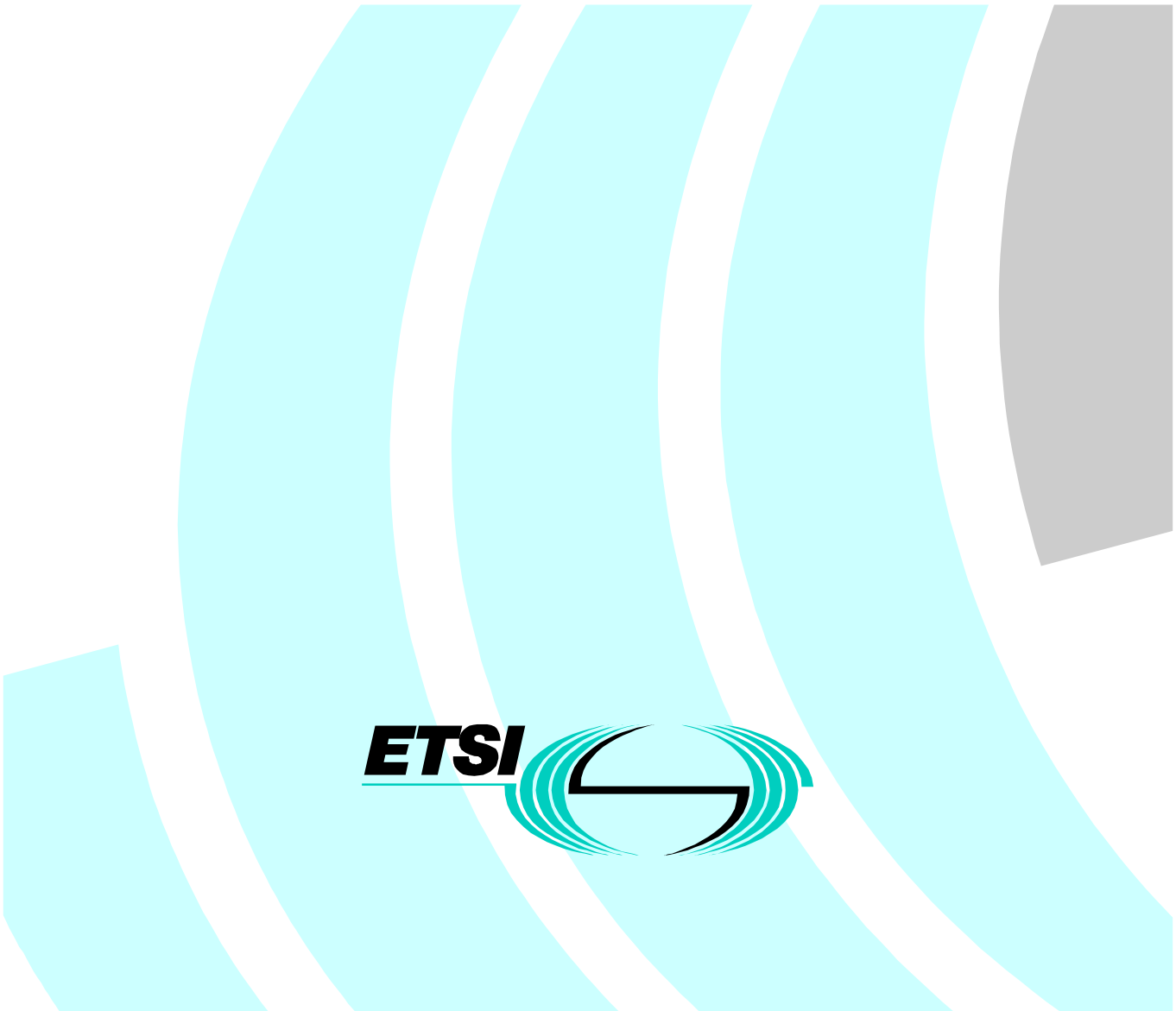
ETSI EN 300 433-2 V1.1.1 (2000-08)

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



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Contents

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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 adoption of this EN:	21 July 2000
Date of latest announcement of this EN (doa):	31 October 2000
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 April 2001
Date of withdrawal of any conflicting National Standard (dow):	30 April 2001

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.

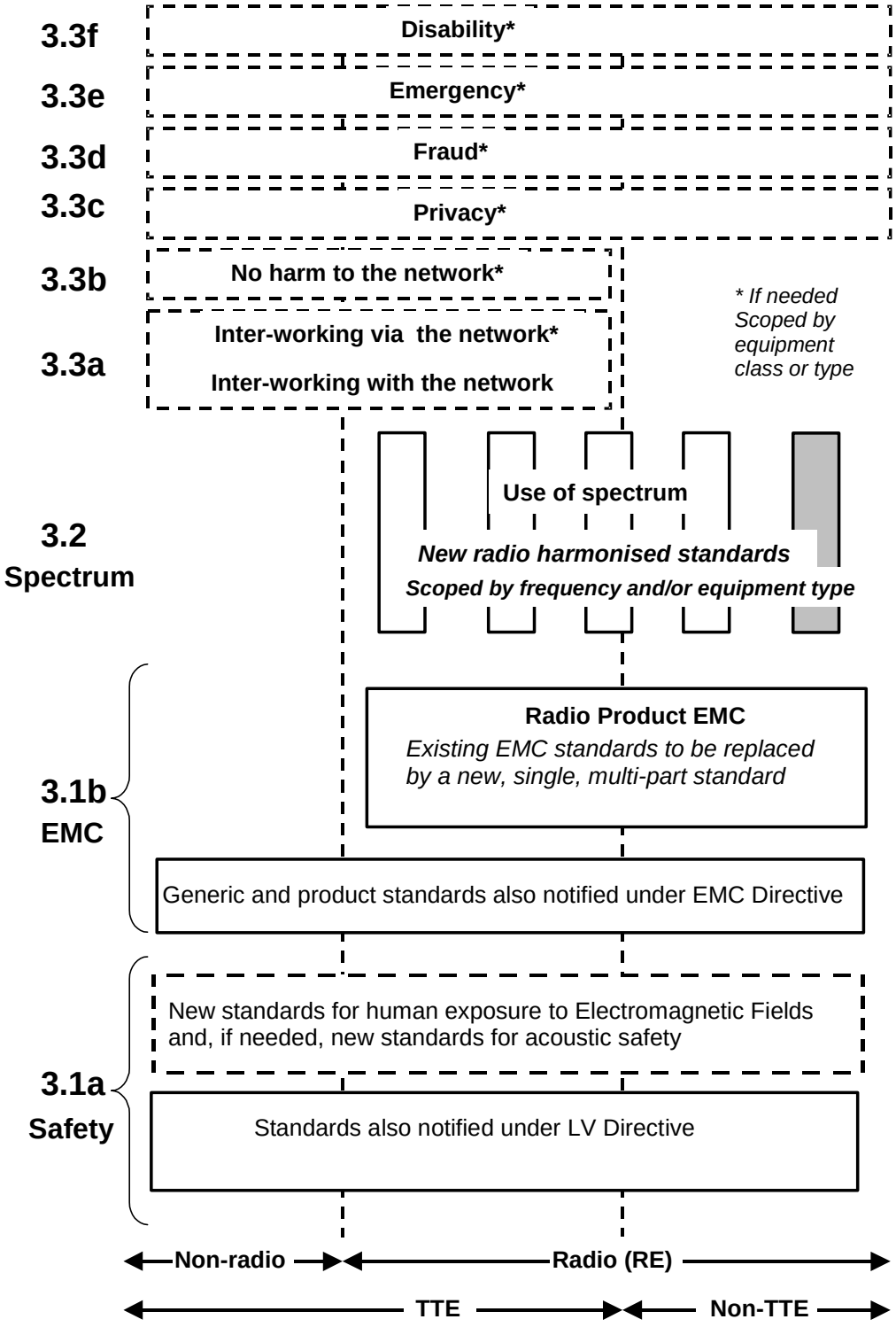

Figure 1: Modular structure for the various standards used under the R&TTE Directive

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.

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, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[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 (V1.1.2): "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 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.

4.2.2.2 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 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.

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.

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.

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.						

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.

History

Document history		
V1.1.1	March 2000	One-step Approval Procedure OAP 20000721: 2000-03-22 to 2000-07-21
V1.1.1	August 2000	Publication