

# ETSI EN 301 166-2 V1.2.1 (2007-07)

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*Harmonized European Standard (Telecommunications series)*

**Electromagnetic compatibility  
and Radio spectrum Matters (ERM);  
Land Mobile Service;  
Radio equipment for analogue and/or digital  
communication (speech and/or data) and operating on  
narrow band channels and having an antenna connector;  
Part 2: Harmonized EN covering essential requirements  
of article 3.2 of the R&TTE Directive**

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**Reference**

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## Foreword

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

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC [3] (as amended) laying down a procedure for the provision of information in the field of technical standards and regulations.

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

The present document is part 2 of a multi-part deliverable covering Land Mobile Service; Radio equipment for analogue and/or digital communication (speech and/or data) and operating on narrow band channels and having an antenna connector, as identified below:

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

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

Technical specifications relevant to Directive 1999/5/EC [1] are given in annex A.

<b>National transposition dates</b>	
Date of adoption of this EN:	22 June 2007
Date of latest announcement of this EN (doa):	30 September 2007
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 March 2008
Date of withdrawal of any conflicting National Standard (dow):	31 March 2009

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## 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 [1]. The modular structure is shown in EG 201 399 (see bibliography).

# 1 Scope

The present document applies to radio transmitters and receivers used in stations in the Private Mobile Radio (PMR) service. It applies to use in the land mobile service capable of operating in all or any part of the frequency bands given below.

**Table 1: Radiocommunications service frequency bands**

<b>Radiocommunications service frequency bands</b>	
Transmit	30 MHz to 3 000 MHz
Receive	30 MHz to 3 000 MHz

The present document applies to equipment operating with narrow channel separations (CSP) (less than 10 kHz) and intended for speech and/or data. It is the intention of the present document to cover any Channel Bandwidths (CBW) permitted by National Administrations for such systems e.g. 6,25 kHz.

In the present document different requirements are given for the different radio frequency bands, environmental conditions and types of equipment where appropriate.

In the present document, data transmission systems are defined as systems which transmit and/or receive data and/or digitized voice. The equipment comprises a transmitter and associated encoder and modulator and/or a receiver and associated demodulator and decoder.

The present document covers equipment which may use constant envelope or non-constant envelope modulation.

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.
- handportable 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  $\Omega$  RF connector which allows access to the transmitter output and the receiver input.

Handportable station equipment without an external or internal Radio Frequency (RF) connector and without the possibility of having a temporary internal 50  $\Omega$  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 [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.

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## 2 References

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

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

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

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

- [1] Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (R&TTE Directive).
- [2] ETSI EN 301 166-1 (V1.2.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Radio equipment for analogue and/or digital communication (speech and/or data) and operating on narrow band channels and having an antenna connector; Part 1: Technical characteristics and methods of measurement".
- [3] 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.

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## 3 Definitions, symbols and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in the R&TTE Directive [1] and EN 301 166-1 [2] apply.

### 3.2 Symbols

For the purposes of the present document, the symbols given in EN 301 166-1 [2] apply.

### 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in EN 301 166-1 [2] apply.

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## 4 Technical requirements

For equipment without an external antenna connector (integral antenna equipment) but fitted with a permanent internal or a temporary internal 50  $\Omega$  RF connector which allows access to the transmitter output and the receiver input, the following additional measurements are made using the equipment antenna connected to the station (and not using any connector):

- transmitter effective radiated power;
- transmitter radiated spurious emissions;
- receiver maximum usable sensitivity (field strength);
- receiver spurious radiations.

### 4.1 Environmental profile

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

### 4.2 Transmitter requirements

#### 4.2.1 Frequency error

##### 4.2.1.1 Definition

The frequency error is defined in EN 301 166-1 [2], clause 7.7.1.

##### 4.2.1.2 Limit

The frequency error shall not exceed the limits in EN 301 166-1 [2], clause 7.7.3.

##### 4.2.1.3 Conformance

If the transmitter adjacent and alternate 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 Maximum power (PX) (conducted)

##### 4.2.2.1 Definition

The maximum power (conducted) is defined in EN 301 166-1 [2], clause 7.1.1.

##### 4.2.2.2 Limit

The maximum power (conducted) shall not exceed the limits in EN 301 166-1 [2], clause 7.1.3.

##### 4.2.2.3 Conformance

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



## 4.2.3 Maximum effective radiated power

### 4.2.3.1 Definition

The maximum effective radiated power is defined in EN 301 166-1 [2], clause 7.2.1.

### 4.2.3.2 Limit

The maximum effective radiated power shall not exceed the limits in EN 301 166-1 [2], clause 7.2.3.

### 4.2.3.3 Conformance

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

## 4.2.4 Adjacent and alternate channel power

### 4.2.4.1 Definition

The adjacent channel power is defined in EN 301 166-1 [2], clause 7.3.1.

### 4.2.4.2 Limit

The adjacent channel power shall not exceed the limits in EN 301 166-1 [2], clause 7.3.3.

### 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 301 166-1 [2], clause 7.4.1.

### 4.2.5.2 Limit

The unwanted emissions in the spurious domain shall not exceed the limits in EN 301 166-1 [2], clause 7.4.3.

### 4.2.5.3 Conformance

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

## 4.2.6 Intermodulation attenuation

### 4.2.6.1 Definition

The intermodulation attenuation is defined in EN 301 166-1 [2], clause 7.5.1.

### 4.2.6.2 Limit

The intermodulation attenuation shall not exceed the limits in EN 301 166-1 [2], clause 7.5.3.

### 4.2.6.3 Conformance

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

## 4.2.7 Transient power

### 4.2.7.1 Definition

The transient power is defined in EN 301 166-1 [2], clause 7.6.1.

### 4.2.7.2 Limit

The transient power shall not exceed the limits in EN 301 166-1 [2], clause 7.6.3.

### 4.2.7.3 Conformance

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

## 4.2.8 Transmitter timeout timer

### 4.2.8.1 Definition

A transmitter timeout timer is a call duration timer that starts when the PTT key is pressed and when this timer expires, the equipment will stop transmitting immediately and may not re-transmit until PTT has been released and pressed again.

### 4.2.8.2 Limit

This timer and the limits values used will depend on the class and use of the equipment.

NOTE: Equipment complying with the present document and operating within the frequency range from 446,1 MHz to 446,2 MHz require a limit value of 180 seconds.

### 4.2.8.3 Conformance

Compliance with this function and the limit value employed shall be by declaration.

## 4.3 Receiver requirements

### 4.3.1 Maximum usable sensitivity

#### 4.3.1.1 Definition

The sensitivity is defined in EN 301 166-1 [2], clause 8.1.1 (analogue conducted), clause 8.2.1 (analogue field strength), clause 8.3.1 (digital conducted) and clause 8.4.1 (digital field strength).

In addition, for duplex equipment (equipment providing simultaneous transmission and reception), the receiver desensitization is defined in EN 301 166-1 [2], clause 9.1.1.

#### 4.3.1.2 Limit

The sensitivity shall not exceed the limits in EN 301 166-1 [2], clause 8.1.3 (analogue conducted), clause 8.2.3, (analogue field strength), clause 8.3.3 (digital conducted) and clause 8.4.3, (digital field strength).

In addition, for duplex equipment (equipment providing simultaneous transmission and reception), the receiver desensitization shall meet the requirements of EN 301 166-1 [2], clause 9.1.3.

#### 4.3.1.3 Conformance

Conformance tests as defined in clause 5.4.1 may be carried out.

## 4.3.2 Co-channel rejection

### 4.3.2.1 Definition

The co-channel rejection is defined in EN 301 166-1 [2], clause 8.10.1.

### 4.3.2.2 Limit

The co-channel rejection shall not exceed the limits in EN 301 166-1 [2], clause 8.10.3.

### 4.3.2.3 Conformance

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

## 4.3.3 Adjacent channel selectivity

### 4.3.3.1 Definition

The adjacent channel selectivity is defined in EN 301 166-1 [2], clause 8.5.1.

### 4.3.3.2 Limit

The adjacent channel selectivity shall not exceed the limits in EN 301 166-1 [2], clause 8.5.3.

### 4.3.3.3 Conformance

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

## 4.3.4 Spurious response rejection

### 4.3.4.1 Definition

The spurious response rejection is defined in EN 301 166-1 [2], clause 8.6.1.

In addition, for duplex equipment (equipment providing simultaneous transmission and reception), the receiver spurious response rejection (with simultaneous transmission and reception) is defined in EN 301 166-1 [2], clause 9.2.1.

### 4.3.4.2 Limit

The spurious response rejection shall not exceed the limits in EN 301 166-1 [2], clause 8.6.3.

In addition, for duplex equipment (equipment providing simultaneous transmission and reception), the receiver spurious response rejection (with simultaneous transmission and reception) shall not exceed the limits in EN 301 166-1 [2], clause 9.2.3.

### 4.3.4.3 Conformance

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

## 4.3.5 Intermodulation response rejection

### 4.3.5.1 Definition

The intermodulation response rejection is defined in EN 301 166-1 [2], clause 8.7.1.

#### 4.3.5.2 Limit

The intermodulation response rejection shall not exceed the limits in EN 301 166-1 [2], clause 8.7.3.

#### 4.3.5.3 Conformance

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

### 4.3.6 Blocking or desensitization

#### 4.3.6.1 Definition

The blocking or desensitization is defined in EN 301 166-1 [2], clause 8.8.1.

#### 4.3.6.2 Limit

The blocking or desensitization shall not exceed the limits in EN 301 166-1 [2], clause 8.8.3.

#### 4.3.6.3 Conformance

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

### 4.3.7 Spurious radiations

#### 4.3.7.1 Definition

The spurious radiations are defined in EN 301 166-1 [2], clause 8.9.1.

#### 4.3.7.2 Limit

The spurious radiations shall not exceed the limits in EN 301 166-1 [2], clause 8.9.3.

#### 4.3.7.3 Conformance

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

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## 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 301 166-1 [2], clauses 5.3, 5.4 and 5.5.

### 5.1.2 Test power source

The test power source shall meet the requirements of EN 301 166-1 [2], 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 301 166-1 [2], 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;
- 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 10 (table 11) of EN 301 166-1 [2].

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 (see bibliography) 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)).

The absolute measurement uncertainties are given in clause 10 (table 11) of EN 301 166-1 [2].

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 (see bibliography).

## 5.3 Essential test suites

Essential test suites are referred to in annex III of R&TTE Directive [1].

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

### 5.3.1 Frequency error

If the transmitter adjacent and alternate channels power (clause 5.3.4) has not been measured under extreme test conditions, then the measurements specified in EN 301 166-1 [2], clause 7.7.2 shall be carried out.

### 5.3.2 Maximum power (PX) (conducted)

The measurements specified in EN 301 166-1 [2], clause 7.1.2 shall be carried out.

### 5.3.3 Maximum effective radiated power

The measurements specified in EN 301 166-1 [2], clause 7.2.2 shall be carried out.

### 5.3.4 Adjacent and alternate channel power

The measurements specified in EN 301 166-1 [2], clause 7.3.2 shall be carried out.

### 5.3.5 Unwanted emissions in the spurious domain

The measurements specified in EN 301 166-1 [2], clause 7.4.2 shall be carried out.

### 5.3.6 Intermodulation attenuation

The measurements specified in EN 301 166-1 [2], clause 7.5.2. shall be carried out.

### 5.3.7 Transient power

The measurements specified in EN 301 166-1 [2], clause 7.6.2 shall be carried out.

### 5.3.8 Receiver spurious radiations

The measurements specified in EN 301 166-1 [2], clause 8.9.2 shall be carried out.

## 5.4 Other test suites

The requirements in clauses 4.3.1 to 4.3.6 inclusive have been set on the assumption that the measurements in clauses 5.4.1 to 5.4.6 are used in order to assess the performance of the equipment.

### 5.4.1 Maximum usable sensitivity

The measurements specified in EN 301 166-1 [2], clause 8.1.2 (analogue conducted), clause 8.2.2 (analogue field strength), clause 8.3.2 (digital conducted) and clause 8.4.2 (digital field strength) as appropriate, shall be carried out.

In addition, in the case of duplex equipment (equipment providing simultaneous transmission and reception), the measurements specified in EN 301 166-1 [2], clause 9.1.2 shall be carried out.

### 5.4.2 Co-channel rejection

The measurements specified in EN 301 166-1 [2], clause 8.10.2 shall be carried out.

### 5.4.3 Adjacent channel selectivity

The measurements specified in EN 301 166-1 [2], clause 8.5.2 shall be carried out.

### 5.4.4 Spurious response rejection

The measurements specified in EN 301 166-1 [2], clause 8.6.2 shall be carried out.

In addition, in the case of duplex equipment (equipment providing simultaneous transmission and reception), the measurements specified in EN 301 166-1 [2], clause 9.2.2 shall be carried out.

### 5.4.5 Intermodulation response rejection

The measurements specified in EN 301 166-1 [2], clause 8.7.2 shall be carried out.

### 5.4.6 Blocking or desensitization

The measurements specified in EN 301 166-1 [2], clause 8.8.2 shall be carried out.

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

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

- it provides a statement of all the essential requirements in words and by cross reference to (a) specific clause(s) in the present document or to (a) specific clause(s) in a specific referenced document;
- it provides a statement of all the test procedures corresponding to those essential requirements by cross reference to (a) specific clause(s) in the present document or to (a) specific clause(s) in (a) specific referenced document(s);
- it qualifies each requirement to be either:
  - Unconditional: meaning that the requirement applies in all circumstances, or
  - Conditional: meaning that the requirement is 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)**

<b>Harmonized Standard EN 301 166-2</b>						
The following essential requirements and test specifications are relevant to the presumption of conformity under Article 3.2 of the R&TTE Directive						
<b>Essential Requirement</b>			<b>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>
<b>1</b>	Transmitter frequency error	4.2.1	C	Does not apply if transmitter adjacent and alternate channels power is measured under extreme test conditions	E	5.3.1
<b>2</b>	Transmitter maximum power (PX) conducted	4.2.2	C	Applies to all equipment having an antenna port	E	5.3.2
<b>3</b>	Transmitter maximum effective radiated power	4.2.3	C	Applies to all equipment having an integral antenna	E	5.3.3
<b>4</b>	Transmitter adjacent and alternate channels power	4.2.4	U		E	5.3.4
<b>5</b>	Transmitter unwanted emissions in the spurious domain	4.2.5	U		E	5.3.5
<b>6</b>	Transmitter intermodulation attenuation	4.2.6	C	Applies only to base station equipment	E	5.3.6

Harmonized Standard EN 301 166-2						
The following essential requirements and test specifications are relevant to the presumption of conformity under Article 3.2 of the R&TTE Directive						
Essential Requirement			Requirement Conditionality		Test Specification	
No	Description	Reference: Clause No	U/C	Condition	E/O	Reference: Clause No
7	Transmitter transient power	4.2.7	U		E	5.3.7
8	Receiver spurious radiations	4.3.7	U		E	5.3.8
9	Receiver maximum useable sensitivity	4.3.1	C	Applies only to equipment using listen-before-transmit	O	5.4.1
10	Receiver co-channel rejection	4.3.2	C	Applies only to equipment using listen-before-transmit	O	5.4.2
11	Receiver adjacent channel selectivity	4.3.3	C	Applies only to equipment using listen-before-transmit	O	5.4.3
12	Receiver spurious response rejection	4.3.4	C	Applies only to equipment using listen-before-transmit	O	5.4.4
13	Receiver inter-modulation response	4.3.5	C	Applies only to equipment using listen-before-transmit	O	5.4.5
14	Receiver blocking or desensitization	4.3.6	C	Applies only to equipment using listen-before-transmit	O	5.4.6
15	Transmitter time out timer	4.2.8	C	Applicable to certain classes of equipment having a transmitter time out timer	X	

#### Key to columns:

##### Essential Requirement:

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

**Description** A textual reference to the requirement.

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

##### Requirement Conditionality:

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

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

##### Test Specification:

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

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

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



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

Language	EN title
Bulgarian	Електромагнитна съвместимост и въпроси на радиоспектъра (ERM). Земна подвижна служба. Радиосъоръжения с антенен съединител за аналогови и/или цифрови съобщения (говор и/или данни), работещи на теснолентови канали. Част 2: Хармонизиран европейски стандарт (EN), покриващ съществените изисквания на член 3.2 от Директивата за радиосъоръжения и крайни далекосъобщителни устройства (R&TTEd)
Czech	Elektromagnetická kompatibilita a rádiové spektrum (ERM) – Pozemní mobilní služba – Rádiová zařízení pro analogové a/nebo digitální komunikace (hovorové a/nebo datové), pracující na úzkopásmových kanálech a opatřená anténním konektorem; Část 2: Harmonizovaná EN pokrývající základní požadavky článku 3.2 Směrnice R&TTE
Danish	Elektromagnetisk kompatibilitet og radio spektrumanliggender (ERM); Landmobile tjenester; radioudstyr for analog og/eller digital kommunikation (tale og/eller data) i smalbandskanaler, udstyret med antennebøsning; Del 2: Harmoniseret EN, der dækker de væsentlige krav i R&TTE direktivets artikel 3.2
Dutch	Elektromagnetische compatibiliteit en radiospectrumaangelegenheden (ERM); Landmobilele dienst; Radioapparatuur voor analoge en/of digitale communicatie (spraak en/of data) werkend op smalband kanalen en met antenne connector; Deel 2: Geharmoniseerde EN welke invulling geeft aan de essentiële eisen van artikel 3.2 van de R&TTE richtlijn
English	Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Radio equipment for analogue and/or digital communication (speech and/or data) and operating on narrow band channels and having an antenna connector; Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive
Estonian	Elektromagnetilise ühilduvuse ja raadiospektri küsimused (ERM); Liikuv maaside; Antenni ühendusega kitsaribalisel kanalil töötavad analoog- ja/või digitaalside (kõne ja /või andmeedastus) raadioseadmed; Osa 2: Harmoneeritud EN R&TTE direktiivi artikli 3.2 põhinõuete alusel
Finnish	Sähkömagneettinen yhteensopivuus ja radiospektriasiat (ERM); Siirtyvän maaradioliikenteen järjestelmät; Antenniiliitintä käyttävät analogiseen ja/tai digitaaliseen tiedonsiirtoon (puhe ja/tai data) tarkoitettut radiolaitteet, jotka toimivat kapeakaistaisilla kanavilla; Osa 2: Yhdenmukaistettu standardi (EN), joka kattaa R&TTE-direktiivin artiklan 3.2 mukaiset olennaiset vaatimukset
French	Télécommunications - Compatibilité électromagnétique et spectre radioélectrique (ERM) - Service mobile terrestre - Équipements radio pour communications analogique et ou numériques (voix et/ou données) fonctionnant sur canaux en bande étroite et ayant un connecteur d'antenne
German	Elektromagnetische Verträglichkeit und Funkspektrumangelegenheiten (ERM) - Mobiler Landfunkdienst - Funkgeräte zur analogen und/oder digitalen Kommunikation (Sprache und/oder Daten), die auf Schmalbandkanälen arbeiten und einen Antennenstecker haben; Teil 2: Harmonisierte EN, die wesentliche Anforderungen nach Artikel 3.2 der R&TTE
Greek	Ηλεκτρομαγνητική Συμβατότητα και Θέματα Ραδιοφάσματος (ERM) – Κινητή υπηρεσία ξηράς – Ραδιοεξοπλισμός ο οποίος προορίζεται για αναλογική και/ή ψηφιακή επικοινωνία (ομιλίας και/ή δεδομένων) και ο οποίος λειτουργεί σε στενοζωνικά κανάλια και διαθέτει σύνδεσμο κεραίας; Μέρος 2: Εναρμονισμένο EN για την κάλυψη των ουσιωδών απαιτήσεων του άρθρου 3.2 της Οδηγίας R&TTE
Hungarian	Elektromágneses összeférhetőségi és rádióspektrumügyek (ERM). Földi mozgószoigálat. Keskeny sávú csatornákon működő, antennacsatlakozóval ellátott, analóg és/vagy digitális (beszéd és/vagy adat) kommunikációs rádióberendezések. 2. rész: Az R&TTE-irányelv 3. cikke (2) bekezdésének alapvető követelményeit tartalmazó, harmonizált európai szabvány
Icelandic	Þættir sem varða rafsegulsviðssamhæfi og fjarskiptatíðni (ERM); Farstöðvafjónusta á landi; Tæknilegir eiginleikar og prófunarskiyrði fyrir þráðlausan fjarskiptabúnað fyrir hliðræn og/eða stafræn fjarskipti (tal og/eða gögn) sem starfar á þröngbandsrásum og búinn er loftnetstengli; 2. hluti: Samræmdur Evrópustaðall um grunnkröfur skv. 2. mgr. 3. gr. í tilskipun 1999/5/EC um fjarskiptabúnað og endabúnað til fjarskipta
Italian	Compatibilità elettromagnetica e Questioni relative allo spettro delle radiofrequenze (ERM); Servizio mobile terrestre; Apparecchiature radio per la comunicazione analogica e/o digitale (dialogo e/o dati) e funzionanti in canali a banda stretta ed aventi un connettore d'antenna; Parte 2: Norma Europea armonizzata relativa ai requisiti essenziali dell'articolo 3.2 della Direttiva R&TTE
Latvian	Elektromagnētiskā saderība un radiofrekvencu spektra jautājumi (ERM) - Sauszemes mobilais dienests - Analogo un/vai ciparu sakaru (runas un/vai datu) radioiekārtas, kas strādā šaurjoslas kanālos un kam ir antenas pieslēgvieta - 2.daļa: Harmonizēts Eiropas standarts (EN), kas atbilst R&TTE direktīvas 3.2. punkta būtiskajām prasībām

Language	EN title
Lithuanian	Elektromagnetinio suderinamumo ir radijo dažnių spektro dalykai. Sausumos judriojo ryšio tarnyba. Radijo ryšio įranga, skirta analoginiams ir (arba) skaitmeniniams ryšiu (kalba ir (arba) duomenys), naudojami siaurajuosčius kanalus ir turinti antenos jungtį. 2 dalis. Darnusis Europos standartas, apimantis esminius 1999/5/EC* direktyvos 3.2 straipsnio reikalavimus
Maltese	Kompabilità elettromanjetika u materji relatati ma' spettru radjofoniku (ERM); Servizz mobbli fuq l-art; Tagħmir radjofoniku għal komunikazzjoni analoga u/jew digitali (diskors u/jew data) li jopera fuq kanali ta' frekwenza dejqa u li għandha konnettur ma' antenna; Parti 2: EN armonizzat li jkopri rekwiżiti essenzjali ta' l-artiklu 3.2 tad-Direttiva R&TTE
Norwegian	Elektromagnetisk kompatibilitet og Radiospektrum spørsmål (ERM); Landmobile tjenester; Radioutstyr for analog og/eller digital kommunikasjon (tale og/eller data) og som opererer på smalbands kanaler og som har en antennetilknytning; Del 2: Harmonisert EN som dekker de vesentligste krav i R&TTE
Polish	Kompatybilność elektromagnetyczna i zagadnienia widma radiowego (ERM); Łądowna służba ruchoma; Urządzenia radiowe do komunikacji analogowej i/lub cyfrowej (mowa i/lub dane) pracujące w kanałach wąskopasmowych i wyposażone w złącza antenowe; Część 2: Zharmonizowana EN zapewniająca spełnienie zasadniczych wymagań zgodnie z artykułem 3.2 dyrektywy R&TTE
Portuguese	Assuntos de Espectro Radioelétrico e Compatibilidade Electromagnética (ERM); Serviço Móvel Terrestre; Equipamento rádio para comunicações analógicas e/ou digitais (voz e/ou dados) e operando em canais de banda estreita com conector de antena; Parte 2: EN Harmonizada cobrindo os requisitos essenciais no âmbito do artigo 3.º, n.º 2, da Directiva R&TTE
Romanian	Compatibilitate electromagnetică și probleme ale spectrului radio (ERM); Serviciul mobil terestru; Echipamente radio pentru comunicațiile analogice și/sau digitale (voce și/sau date), funcționând pe canale de bandă îngustă și având conector de antenă; Partea 2: EN armonizat acoperind cerințele esențiale ale Articolului 3(2) al Directivei R&TTE
Slovak	Elektromagnetická kompatibilita a závislosti rádiového spektra (ERM). Pozemná pohyblivá služba. Rádiové zariadenia na analógovú a/alebo digitálnu komunikáciu (hovor a/alebo dáta) pracujúce v úzkopásmových kanáloch s anténovým konektorom. Časť 2: Harmonizovaná EN vzťahujúca sa na základné požiadavky podľa článku 3.2 smernice RTTE
Slovenian	Elektromagnetna združljivost in zadeve v zvezi z radijskim spektrom (ERM) – Kopenske mobilne storitve – Radijska oprema za analogne in/ali digitalne komunikacije (prenos govora in/ali podatkov), ki deluje v ozkopasovnih kanalih in ima antenski konektor – 2. del: Harmonizirani EN, ki zajema bistvene zahteve člena 3.2 direktive RTTE
Spanish	Cuestiones de Compatibilidad Electromagnética y Espectro de Radiofrecuencia (ERM); Servicio móvil terrestre; Equipos de radiocomunicaciones para transmisión analógica y/o digital (voz y/o datos) que trabajan con canales de banda estrecha y que tienen un conector de antena: ; Parte 2: Norma Europea (EN) armonizada, cubriendo los requisitos esenciales según el artículo 3,2 de la Directiva R&TTE
Swedish	Elektromagnetisk kompatibilitet och radiospektrumfrågor (ERM); Landmobil tjänst; Radioutrustning för analog och/eller digital kommunikation (tal och/eller data) och som arbetar på smalbandskanaler och som har antenkontakt; Del 2: Harmoniserad EN omfattande väsentliga krav enligt artikel 3.2 i R&TTE-direktivet

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## Annex C (informative): Bibliography

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".

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".

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## History

<b>Document history</b>		
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