

# ETSI EN 300 113-2 V1.4.2 (2009-11)

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*Harmonized European Standard (Telecommunications series)*

**Electromagnetic compatibility  
and Radio spectrum Matters (ERM);  
Land mobile service;  
Radio equipment intended for the transmission  
of data (and/or speech) using constant or non-constant  
envelope modulation 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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## 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 [i.2] (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 [i.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").

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

The present document is part 2 of a multi-part deliverable covering the Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation 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".**

### Proposed national transposition dates

Date of latest announcement of this EN (doa):	28 February 2010
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 August 2010
Date of withdrawal of any conflicting National Standard (dow):	31 August 2011

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

# 1 Scope

The present document covers the technical requirements for radio transmitters and receivers used in stations in the Private Mobile Radio (PMR) service.

It applies to use in the land mobile service, operating on radio frequencies in all or in any part of the frequencies as given below, with channel separations of 12,5 kHz, 20 kHz and 25 kHz, intended for speech and/or data.

**Table 1: Radiocommunications service frequency bands**

	<b>Radiocommunications service frequency bands</b>
Transmit	30 MHz to 1 000 MHz
Receive	30 MHz to 1 000 MHz

It applies to equipment for continuous and/or discontinuous transmission of data and/or digital speech.

The equipment comprises a transmitter and associated encoder and modulator and/or a receiver and associated demodulator and decoder. The types of equipment covered by the present document are as follows:

- base station (equipment fitted with an antenna connector, intended for use in a fixed location);
- mobile station (equipment fitted with an antenna connector, normally used in a vehicle or as a transportable);
- and those hand portable stations:
  - a) fitted with an antenna socket; or
  - b) without an external antenna socket, but fitted with a permanent internal or a temporary internal 50  $\Omega$  Radio Frequency (RF) connector which allows access to the transmitter output and the receiver input.

Hand portable equipment without an external or internal 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 (R&TTE Directive) [i.1], which states that "(...) radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radiocommunications 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 [i.1] may apply to equipment within the scope of the present document.

NOTE: A list of such ENs is included on the web site <http://www.newapproach.org>.

# 2 References

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.
- Non-specific reference may be made only to a complete document or a part thereof and only in the following cases:
  - if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;
  - for informative references.

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 indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

- [1] ETSI EN 300 113-1 (V1.6.2): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector; Part 1: Technical characteristics and methods of measurement".

## 2.2 Informative references

The following referenced documents are not essential to the use of the present document but they assist the user with regard to a particular subject area. For non-specific references, the latest version of the referenced document (including any amendments) applies.

- [i.1] Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (R&TTE Directive).
- [i.2] Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on information society services.
- [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".

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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 [i.1] and EN 300 113-1 [1] apply.

### 3.2 Symbols

For the purposes of the present document, the symbols given in EN 300 113-1 [1] apply.

### 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in EN 300 113-1 [1] apply.

## 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 declared by the manufacturer 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 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 300 113-1 [1], clause 7.1.1.

##### 4.2.1.2 Limit

The frequency error shall not exceed the limits in EN 300 113-1 [1], clause 7.1.3.

##### 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 Transmitter power (conducted)

##### 4.2.2.1 Definition

The transmitter power (conducted) is defined in EN 300 113-1 [1], clause 7.2.1.

##### 4.2.2.2 Limit

The transmitter power (conducted) shall not exceed the limits in EN 300 113-1 [1], clause 7.2.3.

##### 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 300 113-1 [1], clause 7.3.1.

##### 4.2.3.2 Limit

The maximum effective radiated power shall not exceed the limits in EN 300 113-1 [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 and alternate channel power

### 4.2.4.1 Definition

The adjacent and alternate channel power is defined in EN 300 113-1 [1], clause 7.4.1.

### 4.2.4.2 Limit

The adjacent and alternate channel power shall not exceed the limits in EN 300 113-1 [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 300 113-1 [1], clause 7.5.1.

### 4.2.5.2 Limit

The unwanted emissions in the spurious domain shall not exceed the limits in EN 300 113-1 [1], clause 7.5.4.

### 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 300 113-1 [1], clause 7.6.1.

### 4.2.6.2 Limit

The intermodulation attenuation shall not exceed the limits in EN 300 113-1 [1], clause 7.6.3.

### 4.2.6.3 Conformance

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

## 4.2.7 Transient frequency behaviour of the transmitter

### 4.2.7.1 Definition

The transient frequency behaviour of the transmitter is defined in EN 300 113-1 [1], clause 7.9.1.

### 4.2.7.2 Limit

The transient frequency behaviour of the transmitter shall not exceed the limits in EN 300 113-1 [1], clause 7.9.4.

### 4.2.7.3 Conformance

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