
Elektromagnetna združljivost in zadeve v zvezi z radijskim spektrom (ERM) - Oprema za radiofrekvenčno identifikacijo (RFID), ki deluje v pasu od 865 MHz do 868 MHz z močnostnimi nivoji do 2 W - 2. del: Harmonizirani EN, ki zajema bistvene zahteve člena 3.2 direktive R&TTE

Electromagnetic compatibility and Radio spectrum Matters (ERM) - Radio Frequency Identification Equipment operating in the band 865 MHz to 868 MHz with power levels up to 2 W - Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive

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Ta slovenski standard je istoveten z: EN 302 208-2 Version 1.3.1

ICS:

33.060.99	Druga oprema za radijske komunikacije	Other equipment for radiocommunications
33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general

SIST EN 302 208-2 V1.3.1:2010 **en**

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ETSI EN 302 208-2 V1.3.1 (2010-02)

Harmonized European Standard (Telecommunications series)

**Electromagnetic compatibility
and Radio spectrum Matters (ERM);
Radio Frequency Identification Equipment operating in the
band 865 MHz to 868 MHz with power levels up to 2 W;
Part 2: Harmonized EN covering essential requirements
of article 3.2 of the R&TTE Directive**

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Reference

REN/ERM-TG34-005-2

Keywords

ID, radio, regulation, short range, terrestrial

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Sous-Préfecture de Grasse (06) N° 7803/88

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SIST EN 302 208-2 V1.3.1:2010

<https://standards.iteh.ai/catalog/standards/sist/c71936fe-4d0c-4795-aeaf-1cd485562341/EN-302-208-2-v1-3-1-2010>

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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.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 [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 Radio Frequency Identification Equipment operating in the band 865 MHz to 868 MHz with power levels up to 2 W, as identified below:

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

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

The present document includes improvements to the previous version of the standard that take advantage of technical developments within the RFID industry. In particular this includes the ability for multiple interrogators to transmit simultaneously on the same channel. This provides significant improvements in spectrum efficiency and system performance. As a consequence "listen before talk" is no longer a requirement.

National transposition dates

Date of adoption of this EN:	8 February 2010
Date of latest announcement of this EN (doa):	31 May 2010
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 November 2010
Date of withdrawal of any conflicting National Standard (dow):	30 November 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 [i.1]. The modular structure is shown in EG 201 399 [i.2].

1 Scope

The present document applies to RFID interrogators and tags operating together as a system. The interrogators transmit in four specified channels of 200 kHz each using a modulated carrier. The tags preferably respond with a modulated signal in the adjacent low power channels. Interrogators may be used with either integral or external antennas.

The present document applies to RFID interrogators used in conjunction with their RFID transponders (tags). The interrogators operate in the dense interrogator mode in 200 kHz channels using a modulated carrier. The tags respond in the adjacent channels with a modulated signal. Interrogators may be used with either integral or external antennas.

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

- fixed interrogators;
- portable interrogators;
- batteryless tags;
- battery assisted tags;
- battery powered tags.

These radio equipment types are capable of operating in all or any part of the frequency band as specified below.

Table 1: Frequencies of operation

Equipment	Operating frequencies
Interrogator Transmit channel 4	865,6 MHz to 865,8 MHz
Interrogator Transmit channel 7	866,2 MHz to 866,4 MHz
Interrogator Transmit channel 10	866,8 MHz to 867,0 MHz
Interrogator Transmit channel 13	867,4 MHz to 867,6 MHz
Interrogator Receive	865,0 MHz to 868,0 MHz
Tag Transmit	865,0 MHz to 868,0 MHz

The present document is intended to cover the provisions of Directive 1999/5/EC [i.1] (R&TTE Directive), article 3.2, 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 [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 302 208-1 (V1.3.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Radio Frequency Identification Equipment operating in the band 865 MHz to 868 MHz with power levels up to 2 W; Part 1: Technical requirements 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 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] 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"; <http://standards.iteh.ai/catalog/standards/sist/c71936fe-4d0c-4795-aeaf-1cd4855623d7/sist-en-302-208-2-v1-3-1-2010>
- [i.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.

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 302 208-1 [1] apply.

3.2 Symbols

For the purposes of the present document, the symbols given in EN 302 208-1 [1] apply.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in EN 302 208-1 [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 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 declared operational environmental profile.

4.1.1 Choice of samples for test suite

Measurement shall be performed according to the present document on samples of equipment defined in EN 302 208-1 [1], clause 4.2.3.

4.2 Transmitter conformance requirements

4.2.1 Frequency error

This requirement applies only to interrogators.

The frequency error, as defined in EN 302 208-1 [1], clause 8.1.1 shall not exceed the limits in EN 302 208-1 [1], clause 8.1.3.

4.2.2 Frequency stability under low voltage conditions

This requirement applies only to battery- powered interrogators.

The frequency stability under low voltage conditions as defined in EN 302 208-1 [1], clause 8.2.1 shall comply with the conditions given in EN 302 208-1 [1], clause 8.2.3.

4.2.3 Effective radiated power

This requirement applies only to interrogators.

The effective radiated power, as defined in EN 302 208-1 [1], clause 8.3.1 shall not exceed the limits in EN 302 208-1 [1], clause 8.3.3.

4.2.4 Transmitter antenna beamwidth

This requirement applies only to antennas of interrogators.

The transmitter antenna beamwidth shall comply with the limits in EN 302 208-1 [1], clause 8.3.3.

4.2.5 Transmitter spectrum mask

This requirement applies only to interrogators.

The transmitter spectrum mask, as defined in EN 302 208-1 [1], clause 8.4.1 shall not exceed the limits in EN 302 208-1 [1], clause 8.4.3.

4.2.6 Transmitter spurious emissions

This requirement applies only to interrogators.

The transmitter spurious emissions, as defined in EN 302 208-1 [1], clause 8.5.1 shall not exceed the limits in EN 302 208-1 [1], clause 8.5.3.