



# SLOVENSKI STANDARD

## SIST EN 302 208-2 V1.2.1:2008

01-september-2008

9`Y\_lfca U[ bYfbUnXfi y`1j cgh]b`nUXYj Y`j `nj Yn]`n`fUX]`g\_ ]a `gdY\_lfca `f0FAŁ!  
CdfYa UnUfUX]cZY\_j Yb`bc`]XYbh]Z\_UW]c`fF: =8łż\_]`XYi`Y`j`dUgi`cX`,\*)`A<n`Xc  
,\*,`A<n`n`a`c`bcglb]a]`b]j`c`1`Xc`&K`!`&`XY.`<Ufa`cb]n]fUb]9Bž\_]`nU`Ya`U  
V]ghj`YbY`nU`Hj`Y``YbU`"&X]fY\_hj`YF/`HH9

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

[SIST EN 302 208-2 V1.2.1:2008  
https://standards.iteh.ai/catalog/standards/sist/754333ef-9ff4-43e5-ba66-56bdf1edaad9/sist-en-302-208-2-v1-2-1-2008](https://standards.iteh.ai/catalog/standards/sist/754333ef-9ff4-43e5-ba66-56bdf1edaad9/sist-en-302-208-2-v1-2-1-2008)

Ta slovenski standard je istoveten z: EN 302 208-2 Version 1.2.1

### 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 V1.2.1:2008 en

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 302 208-2 V1.2.1:2008

<https://standards.iteh.ai/catalog/standards/sist/754333ef-9ff4-43e5-ba66-56bdf1edaad9/sist-en-302-208-2-v1-2-1-2008>

# ETSI EN 302 208-2 V1.2.1 (2008-04)

---

*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**

---

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 302 208-2 V1.2.1:2008](https://standards.iteh.ai/catalog/standards/sist/754333ef-9ff4-43e5-ba66-56bdf1edaad9/sist-en-302-208-2-v1-2-1-2008)

<https://standards.iteh.ai/catalog/standards/sist/754333ef-9ff4-43e5-ba66-56bdf1edaad9/sist-en-302-208-2-v1-2-1-2008>



---

**Reference**

REN/ERM-TG34-004-2

---

**Keywords**

ID, radio, regulation, short range, terrestrial

**ETSI**

---

650 Route des Lucioles  
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° 7803/88

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 302 208-2 V1.2.1:2008<https://standards.iteh.ai/catalog/standards/sist/754333ef-9ff4-43e5-ba66-56bdf1eda2a0/sist-en-302-208-2-v1-2-1-2008>**Important notice**

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:

[http://portal.etsi.org/chaicor/ETSI\\_support.asp](http://portal.etsi.org/chaicor/ETSI_support.asp)

---

**Copyright Notification**

No part may be reproduced except as authorized by written permission.  
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2008.  
All rights reserved.

**DECT™**, **PLUGTESTS™**, **UMTS™**, **TIPHON™**, the TIPHON logo and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.

**3GPP™** is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

# Contents

Intellectual Property Rights .....	4
Foreword.....	4
Introduction .....	4
1 Scope .....	5
2 References .....	5
2.1 Normative references .....	6
2.2 Informative references.....	6
3 Definitions, symbols and abbreviations .....	6
3.1 Definitions .....	6
3.2 Symbols.....	6
3.3 Abbreviations .....	6
4 Technical requirements specifications .....	7
4.1 Environmental profile.....	7
4.1.1 Choice of samples for test suite .....	7
4.2 Transmitter conformance requirements.....	7
4.2.1 Frequency error.....	7
4.2.2 Frequency stability under low voltage conditions .....	7
4.2.3 Effective radiated power .....	7
4.2.4 Transmitter antenna beamwidth.....	7
4.2.5 Transmitter spectrum mask.....	7
4.2.6 Transmitter spurious emissions.....	7
4.2.7 Transmission times .....	8
4.3 Receiver conformance requirements.....	8
4.3.1 Receiver spurious radiations.....	8
4.4 Tag conformance requirements.....	8
4.4.1 Tag emissions .....	8
5 Testing for compliance with technical requirements.....	8
5.1 Environmental conditions for testing .....	8
5.1.1 Normal and extreme test conditions.....	8
5.1.2 Test power sources.....	8
5.2 Interpretation of the measurement results .....	8
5.3 Essential transmitter test suites.....	9
5.3.1 Frequency error.....	9
5.3.2 Frequency stability under low voltage conditions .....	9
5.3.3 Effective radiated power .....	9
5.3.4 Transmitter antenna beamwidth.....	9
5.3.5 Transmitter spectrum mask.....	9
5.3.6 Transmitter spurious emissions.....	9
5.3.7 Transmission times .....	9
5.4 Essential receiver test suites .....	9
5.4.1 Receiver spurious radiations .....	9
5.5 Essential tag test suites .....	9
5.5.1 Tag emissions .....	9
<b>Annex A (normative): HS Requirements and conformance Test specifications Table (HS-RTT).....</b>	<b>10</b>
<b>Annex B (informative): The EN title in the official languages .....</b>	<b>12</b>
<b>Annex C (informative): Bibliography.....</b>	<b>14</b>
History .....	15

## Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://webapp.etsi.org/IPR/home.asp>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

## 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 [5] (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 [3] 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 [3] 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:	21 March 2008
Date of latest announcement of this EN (doa):	30 June 2008
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 December 2008
Date of withdrawal of any conflicting National Standard (dow):	31 December 2009

## 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 [4].

# 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 [3] (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 [3] 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>.

For online referenced documents, information sufficient to identify and locate the source shall be provided. Preferably, the primary source of the referenced document should be cited, in order to ensure traceability. Furthermore, the reference should, as far as possible, remain valid for the expected life of the document. The reference shall include the method of access to the referenced document and the full network address, with the same punctuation and use of upper case and lower case letters.

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 (V1.2.1): "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 (V.1.4.1) (all parts): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".

## 2.2 Informative references

- [3] 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).
- [4] 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".  
<https://standards.iteh.ai/catalog/standards/sist/754333ef-9ff4-43e5-ba66-560c1f0caad9/sist-en-302-208-2-v1-2-1-2008>
- [5] 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 [3] 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.