



**SLOVENSKI STANDARD**  
**SIST EN 301 489-2 V1.3.1:2003**

**01-marec-2003**

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**Elektromagnetna združljivost (EMC) in zadeve v zvezi z radijskim spektrom (ERM) - Standard elektromagnetne združljivosti (EMC) za radijsko opremo in storitve - 2. del: Posebni pogoji za opremo radijskega osebnega klica**

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 2: Specific conditions for radio paging equipment

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# ETSI EN 301 489-2 V1.3.1 (2002-08)

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*Candidate Harmonized European Standard (Telecommunications series)*

**Electromagnetic compatibility  
and Radio spectrum Matters (ERM);  
ElectroMagnetic Compatibility (EMC)  
standard for radio equipment and services;  
Part 2: Specific conditions for radio paging equipment**

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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 has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC [4] (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 Council Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility ("the EMC Directive") (89/336/EEC [2] as amended) and 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 ("the R&TTE Directive" [3]).

The present document is part 2 of a multi-part deliverable. Full details of the entire series can be found in part 1 [1].

[SIST EN 301 489-2 V1.3.1:2003](https://standards.iteh.ai/catalog/standards/sist/9533157c-3a99-472c-88f4-c43c782161/sist-en-301-489-2-v1-3-1-2003)

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|  |                  |
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| Date of adoption of this EN:   | 9 August 2002    |
| Date of latest announcement of this EN (doa):  | 30 November 2002 |
| Date of latest publication of new National Standard or endorsement of this EN (dop/e): | 31 May 2003      |
| Date of withdrawal of any conflicting National Standard (dow):                         | 31 May 2004      |

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## 1 Scope

The present document, together with the EN 301 489-1 [1], covers the assessment of paging equipment (receivers, transmitters and combined equipment) and associated ancillary equipment, in respect of ElectroMagnetic Compatibility (EMC).

Technical specifications related to the antenna port and emissions from the enclosure port of paging equipment are not included in the present document. Such technical specifications are found in the relevant product standards for the effective use of the radio spectrum.

The present document specifies the applicable test conditions, performance assessment and performance criteria for paging equipment and associated ancillary equipment.

Examples of paging equipment are given in annex A.

In case of differences (for instance concerning special conditions, definitions, abbreviations) between the present document and the EN 301 489-1 [1], the provisions of the present document take precedence.

The environmental classification and the emission and immunity requirements used in the present document are as stated in the EN 301 489-1 [1], except for any special conditions included in 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.

- [1] ETSI EN 301 489-1: "Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements".
- [2] Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (EMC Directive).
- [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] 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 and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in the EN 301 489-1 [1], clause 3 and the following apply:

**alignment range:** frequency range over which the receiver or transmitter can be programmed and/or re-aligned to operate without any physical change of components other than programmable and frequency controlling devices

**calling function:** transmission of a message via the base transmitter to the paging receiver in order to alert and/or inform the carrier of the paging receiver

**base receiver:** receiver at a fixed location

**pocket receiver:** stand alone pocket paging receiver or a receiver being part of a pocket paging transceiver typically for portable use (portable equipment)

**base transmitter:** transmitter at a fixed location

**pocket transmitter:** stand alone pocket paging transmitter using the return channel, or a transmitter being part of a pocket paging transceiver typically for portable use (portable equipment)

**standby mode (receiver):** mode of operation in which the receiver is capable of receiving calls

**standby mode (base transmitter):** mode of operation in which the transmitter is ready to transmit, waiting for a start control signal to actual start transmitting

**standby mode (pocket transmitter):** mode of operation in which the transmitter is ready to transmit, waiting for a control signal to start the transmitting sequence

**talk-back function:** transmitting of a message from the pocket transmitter (normally combined in a transceiver) which is sent to a central receiver (base receiver) and further processed by the central processing unit

### 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

|       |  |
|-------|--|
| CR    | Continuous phenomena applied to Receivers    |
| CT    | Continuous phenomena applied to Transmitters |
| EMC   | ElectroMagnetic Compatibility                |
| ERMES | Enhanced Radio MESSage System                |
| EUT   | Equipment Under Test                         |
| RF    | Radio Frequency                              |
| TR    | Transient phenomena applied to Receivers     |
| TT    | Transient phenomena applied to Transmitters  |



## 4 Test conditions

For the purposes of the present document, the test conditions of the EN 301 489-1 [1], clause 4, shall apply as appropriate. Further product related test conditions for paging equipment are specified in the present document.

### 4.1 General

For emission and immunity tests the test modulation, test arrangements, etc., as specified in the present document, clauses 4.1.1 to 4.5, shall apply.

#### 4.1.1 Receivers

Whenever a receiver is provided with a detachable antenna, the EUT shall be tested with the antenna fitted in a manner typical of normal intended use.

The individual immunity tests shall be performed with the receiver in the standby mode.

Mobile or pocket receivers:

- before the individual tests the receiver shall be set into the standby mode, a communications link shall be established and the message memory of the receiver shall be loaded with recognizable messages, if applicable (performance check);
- during the individual tests the wanted RF input signal shall **not** be applied to the receiver, except for the spot frequency test as part of the radio frequency electromagnetic field immunity test.
- after the individual tests and the termination of the required performance assessment (e.g. by means of the stored messages in the message memory of the receiver, see clauses 6.3 and 6.4) the communications link shall be re-established and another performance check shall be carried out to verify that the EUT is still operational.

Base receivers:

- [SIST EN 301 489-2 V1.3.1:2003  
https://standards.iteh.ai/catalog/standards/sist/9533157c-3a99-472c-88f4-000000000000/sist-en-301-489-2-v1-3-1-2003](https://standards.iteh.ai/catalog/standards/sist/9533157c-3a99-472c-88f4-000000000000/sist-en-301-489-2-v1-3-1-2003)
- base receivers are not subject to the spot frequency test as part of the radio frequency electromagnetic field immunity test;
  - before the individual tests the base receiver shall be set into the standby mode, a communications link shall be established and the output of the receiver shall be monitored (performance check);
  - during the individual tests the wanted RF input signal (the unmodulated carrier, see clause 4.2) **remains applied** to the base receiver;
  - after the individual tests of the base receiver (see clauses 6.3 and 6.4) and the termination of the required performance assessment (e.g. by means of audio breakthrough measurements at the output of the base receiver, see clauses 6.3 and 6.4) the maintained communications link is switched off and re-established to ensure that the base receiver is still able to receive new incoming requests.

#### 4.1.2 Transmitters

Mobile and pocket transmitters:

- the mobile or pocket transmitter **is not** subject to the spot frequency test as part of the radio frequency electromagnetic field immunity test;
- the mobile or pocket transmitter shall operate in transmit mode with an unmodulated carrier, at its maximum rated output power. If unmodulated operation is not possible, the manufacturer shall specify the method of performance assessment and the acceptable degradation of performance.