SLOVENSKI STANDARD
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Elektromagnetna združljivost (EMC) in zadeve v zvezi z radijskim spektrom (ERM) - Standard za elektromagnetno združljivost (EMC) za opremo osebnega klica za javni osebni klic

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for wide-area paging equipment

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33.050.20	Oprema za osebni klic	Paging equipment
33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general

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Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for wide-area paging equipment

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Electromagnetic compatibility and Radio spectrum Matters (ERM) Technical Committee of the European Telecommunications Institute (ETSI).

This ETS has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 83/189/EEC (as amended) laying down a procedure for the provision of information in the field of technical standards and regulations.

For equipment within the scope of ETS 300 719-1 [15], this ETS, together with ETS 300 719-1 [15], 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 as amended).

For other equipment, this ETS 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 as amended).

Technical specifications relevant to the EMC Directive are given in annex C.

Transposition dates	
Date of adoption of this ETS:	2 January 1998
Date of latest announcement of this ETS (doa):	30 April 1998
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 October 1998
Date of withdrawal of any conflicting National Standard (dow):	31 October 1998

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1 Scope

This European Telecommunication Standard (ETS) covers the assessment of wide-area paging equipment and ancillary equipment, in respect of ElectroMagnetic Compatibility (EMC). Technical specifications related to the antenna port and emissions from the enclosure port of the wide-area paging equipment are not included in this ETS.

This ETS does not cover ERMES paging receiver equipment.

This ETS specifies the applicable EMC tests, the method of measurements, the limits and the minimum performance criteria for wide-area paging equipment.

The environment classification used in this ETS refers to the environment classification used in EN 50081-1 [1], EN 50082-1 [2].

The EMC requirements have been selected to ensure an adequate level of compatibility for apparatus at residential, commercial and light industrial environments. The levels, however, do not cover extreme cases which may occur in any location but with low probability of occurrence.

This ETS may not cover those cases where a potential source of interference which is producing individually repeated transient phenomena or a continuous phenomena is permanently present, e.g. a radar or broadcast site in the near vicinity. In such a case it may be necessary to use special protection applied to either the source of interference or the interfered part or both.

Compliance of wide-area paging equipment to the requirements of this ETS, does not signify compliance to any requirements related to spectrum management or any requirement related to the use of the equipment (licensing requirements).

Compliance to this ETS does not signify compliance to any safety requirements. However, it is the responsibility of the assessor of the equipment that any observation regarding the equipment becoming dangerous or unsafe as a result of the application of the tests of this ETS should be recorded in the test report.

2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] EN 50081-1: "Electromagnetic compatibility - Generic emission standard - Part 1: Residential, commercial and light industry".

[2] EN 50082-1: "Electromagnetic compatibility - Generic immunity standard - Part 1: Residential, commercial and light industry".

[3] 89/336/EEC: "Council Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility".

[4] EN 55022: "Limits and methods of measurement of radio disturbance characteristics of information technology equipment".

[5] CISPR 16-1 (1993): "Specification for radio disturbance and immunity measuring apparatus and methods - Part 1: Radio disturbance and immunity measuring apparatus".

[6] EN 61000-4-3 (1995): "Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 3: Radiated, radio-frequency, electromagnetic field immunity test".

[7] EN 61000-4-2 (1995): "Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 2: Electrostatic discharge immunity test. Basic EMC Publication".

[8] EN 61000-4-4 (1995): "Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 4: Electrical fast transient/burst immunity test. Basic EMC Publication".

[9] EN 61000-4-6 (1993): "Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 6: Immunity to conducted disturbances, induced by radio-frequency fields".

[10] ISO 7637-1 (1990): "Road vehicles - Electrical disturbance by conduction and coupling - Part 1: Passenger cars and light commercial vehicles with nominal 12 V supply voltage - Electrical transient conduction along supply lines only".

[11] ISO 7637-2 (1990): "Road vehicles - Electrical disturbance by conduction and coupling - Part 2: Commercial vehicles with nominal 24 V supply voltage - Electrical transient conduction along supply lines only".

[12] EN 61000-4-11 (1994): "Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 11: Voltage dips, short interruptions and voltage variations immunity tests".

[13] EN 61000-4-5 (1995): "Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 5: Surge immunity test".

[14] ETR 027 (1991): "Radio Equipment and Systems; Methods of measurement for private mobile radio equipment".

[15] ETS 300 719-1 (1997): " Radio Equipment and Systems (RES); Private wide area paging service; Part 1: Technical characteristics for private wide-area paging systems".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the following definitions apply:

alignment range: For the purpose of defining the exclusion bands (see subclause 4.7), the alignment range of the wide-area paging equipment is defined as the 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 read only memories or crystals.

ancillary equipment: Equipment (apparatus), used in connection with a receiver or transmitter, is considered as an ancillary equipment (apparatus):

- if the equipment is intended for use in conjunction with a receiver or transmitter to provide additional operational and/or control features to the wide-area paging equipment, (e.g. to extend control to another position or location); and

- if the equipment cannot be used on a stand alone basis to provide user functions independently of a receiver or transmitter; and

- if the receiver or transmitter to which it is connected, is capable of providing some intended operation such as transmitting and/or receiving without the ancillary equipment (i.e. it is not a sub-unit of the main equipment essential to the main equipment basic functions).

calling function: Transmission of a message via the base transmitter to the pocket receiver in order to alert and/or inform the carrier of the pocket receiver.

enclosure port: The physical boundary of the apparatus through which electromagnetic fields may radiate or impinge.

manufacturer: The legal entity responsible under the terms of the Council Directive 89/336/EEC [3], for placing the product on the market.

mobile equipment: A pocket receiver capable of being powered by the main battery of a vehicle for intended use.

port: A particular interface, of the specified equipment (apparatus), with the electromagnetic environment (see figure 1).

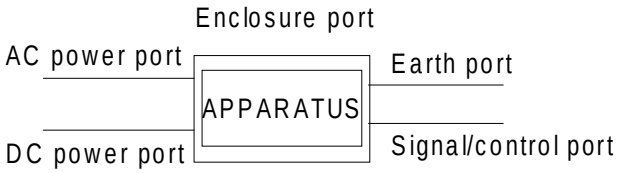

Figure 1

pocket receiver: A stand alone pocket paging receiver.

spot frequency test: A part of the radio-frequency electromagnetic field immunity test (see subclause 9.2.2) which assess the ability of the wide-area paging equipment to transmit and/or receive messages in the presence of radio-frequency electromagnetic field disturbances of defined discrete frequencies.

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

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

wide-area paging equipment: A pocket receiver, a base transmitter or ancillary equipment.

3.2 Abbreviations

For the purposes of this ETS, the following abbreviations apply:

AC	Alternating Current
CR	Continuous phenomena applied to Receivers
CT	Continuous phenomena applied to Transmitters
DC	Direct Current
EMC	ElectroMagnetic Compatibility
erp	effective radiated power
IF	Intermediate Frequency
LISN	Line Impedance Stabilizing Networks
p.d.	potential difference
RF	Radio Frequency
rms	root mean square
TR	Transient phenomena applied to Receivers
TT	Transient phenomena applied to Transmitters
VSWR	Voltage Standing Wave Ratio